SEPTEMBER 19, 1955 Eastern RRs Rebuild After Floods . . . p. 38

RAILWAY AGE

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Receive . . . classify . . . dispatch . . . that's the job of the Hamlet Yard, North Carolina. This gathering point for five of the Seaboard's principal main lines puts into play every modern device to handle this intricate, precision function in the shortest possible time. And there's no room in this split-minute timetable for delays caused by piping failures in vital

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ELECTRIC FURNACE QUALITY STEEL PRODUCTS



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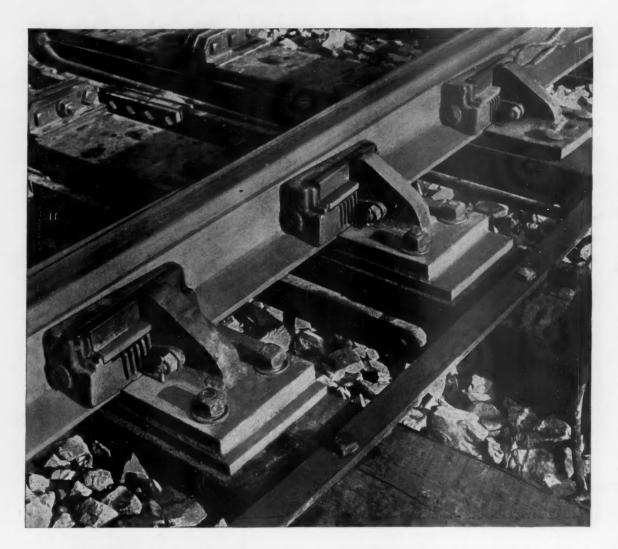
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When heavily-loaded wheels lead into a turnout it takes a little giant to brace the straining rail. That's why you can find Bethlehem's 811 Rail Brace standing guard on so many leading railroads. You can put this sturdy brace where the going's rough, and it will never budge.

The 811 owes its stubbornness to some unique features of design. First, the brace itself is firmly welded to the switch plate. Next, driven between the brace and rail web is a rugged forged wedge containing an angular spring steel piece which can take a compressive force of 20,000 lb. Slippage is virtually prevented by the compression alone.

But just to clinch things, the 811 has two pawls which are turned down into slots in the wedge, locking it into place. The pawls make positive adjustment easy: just disengage them, move the wedge to right or left, then re-position the pawls in the slots. Spacing of the slots permits you to make adjustments in 1/16-in. increments.

A trial will convince you that the 811 Rail Brace is foolproof and highly efficient. As a first step in getting acquainted with this steadfast little brute, why not let a Bethlehem representative take you to a nearby installation? You can reach him through the nearest Bethlehem sales office.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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terlocking, and with reverse running on both tracks, will have a much greater capacity than double-track territory with passing sidings and the tracks signaled for single direction running.

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September 19, 1955

Vol. 139, No. 12

Week at a Glance

Guideposts for becoming successful executives were offered to mechanical officers at last week's Chicago meetings of four railroad associations.

"Where can you use atomic power more usefully than in a locomotive?" asks Maryland's Senator Butler. He told the press last week he expects to draft legislation for the construction of such a locomotive.

FORUM: "Union shop"—is it a remedy or a malady?
This is not a question to be decided on the basis of whether one does or does not believe in unions. The long-run question is whether it is in the national interest to allow unions to enjoy monopoly powers.

37

Floods hit Eastern roads last month with unprecedented force. This week we describe and picture the extent of the damage and outline the traffic detours set up to cope with the emergency.

38

... But they have come back fighting. Men, machines and money have been poured into the task of rehabilitation, and all main lines affected are now back in service, though slow orders will prevail as work continues. 42

Traditional differentials in rate-making are analyzed in the light of today's conditions by Alan M. White, first-prize winner in the essay contest on that topic conducted by *Railway Age* and sponsored by Monon President Brown.

Pullman Company's new "Slumbercoach" is an arrangement adapted to the standard passenger car body which would provide comfortable, even luxurious, accommodations for 62 daytime passengers and inclosed sleeping space, complete with toilet and lavatory, for 31 overnight travelers.

Television and microwave have been combined by the Rock Island in an experimental set-up that enabled your biggest competitor

and how to beat it.

with the

HERTZ

rail-auto travel plan!



Your biggest competitor, of course, is the private automobile, which last year was largely responsible for the 9 per cent *drop* in railroad passenger miles!

The Hertz Rail-Auto Travel Plan has already switched millions of passenger miles from rubber to rail...and it can switch millions more.

What is the potential? Well, last year motorists drove an estimated 520 billion miles between cities...not because they wanted to, but because of the need of cars at their destinations. That's the potential that awaits tapping. And the way to tap it is the Hertz Rail-Auto Travel Plan!

HOW YOU CAN SWITCH EXTRA PASSENGER REVENUE TO YOUR RAILROAD WITH THE HERTZ RAIL-AUTO TRAVEL PLAN

- 1. TRY the Rail-Auto Travel Plan yourself. Enjoy its many advantages. See for yourself why thousands of travelers prefer it to highway travel.
- 2. TELL your ticket agents about the 10% commission Hertz pays them. Urge them to ask passengers this simple question: "May I reserve a car from Hertz al your destination?" It takes only a few minutes to fill out the reservation forms...and the Hertz office concerned will pay—promptly—10% commission on the total rental charge.
- 3. FREE! To remind your passengers of Hertz Service and the Rail-Auto Travel Plan, Hertz provides 3½" signs attractively printed with these words: "Reserve

your Hertz Rent A Car from your ticket agent." These signs clamp on the grill of your ticket agents' windows.

Hertz also provides for the counters of your ticket agents and for ticket envelopes, small $2'' \times 4\frac{1}{2}''$ folders describing Hertz Service and the Rail-Auto Travel Plan. Both items are available in any quantity at no charge.

- 4. HERTZ now spends over \$1,000,000 a year in leading national magazines to sell the Rail-Auto Travel Plan. In your own advertising, promote the Plan. Show its many advantages. Use displays in your ticket offices. Advertise the Plan in your timetables . . . on your bill-boards . . . highway over-passes.
- 5. AND REMEMBER—only Hertz—the world's largest rent a car system—offers 30 years' experience... with more than 10,700 cars at nearly 900 offices in over 550 cities throughout the world. Every car is new, clean... and Hertz furnishes all gasoline, oil... Public Liability, Property Damage, Fire and Theft Insurance, and \$100.00 deductible collision protection—at no extra cost! Hertz has more than 1,500,000 people who hold Hertz Charge Cards and Courtesy Cards. Also, Hertz honors Rail Credit Cards.
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Current Statistics

Operating revenues, seven months	5
1955\$	5.684.845.763
1954	
Operating expenses, seven month	
1955\$4	
1954	
Taxes, seven months	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
1955\$	613 146 288
1954	
Net railway operating income, se	
1955\$	
1954	416.549,883
Net income estimated, seven mon	
1955\$	
	283,000,000
Average price railroad stocks	203,000,000
September 13, 1955	97.59
September 14, 1954	70.54
Carloadings, revenue freight	/0.54
	04040510
Thirty-five weeks, 1955	24,940,518
Thirty-five weeks, 1954	22,530,509
Average daily freight car surplus	
Wk. ended Sept. 10, 1955	5,056
Wk. ended Sept. 11, 1954	74,134
Average daily freight car shorta	
Wk. ended Sept. 10, 1955	9,744
Wk. ended Sept. 11, 1954	611
Freight cars on order	
August 1, 1955	42,888
August 1, 1954	12,889
reight cars delivered	
Seven months, 1955	19,340
Seven months, 1954	25,403
Average number of railroad emplo	
Mid-July 1955	1,090,756
Mid-July 1954	1,078,232

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATON (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1835, INCORPORATES THE RAILWAY REVIEW, THE RAILWAY GETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

Departments

Benchmarks & Yardsticks	51
Competitive Transport	8
Equipment & Supplies	10
Figures of the Week	8
Financial	62
Forum	37
Law & Regulation	10
New Facilities	62
Operations	9
Organizations	16
Railway Officers	68
Revenues & Expenses	70
Supply Trade	13
Traffic	62

Week at a Glance CONTINUED

officers in the road's LaSalle Street Terminal in Chicago to watch activities on the station platforms at Englewood, six miles distant.

Few friends for present controls of tranportation showed up at the recent stimulating meeting in Boston of the American Society of Traffic & Transportation. Urgent need for reducing—but not terminating—railroad regulation was firmly established by able scholars Dearing, Healy and Koontz. Brown Company's Laurence Whittemore said the territorial rate associations need "overhauling," their inflexibility in his opinion having "cost the railroads a great many carloads of freight."

BRIEFS

Last call has been sounded by the New York Railroad Club for entries in its seventh annual essay contest. Papers must be in by October 1.

Roadmasters and Bridge & Building men from railroads all over the country are gathering in Chicago this week for the annual conventions of their associations. Proceedings will be reported in next week's Railway Age.

Advice from its commuter customers is what the New Haven is inviting. Invitations have been extended to communities along its line to set up committees to discuss with railroad representatives things about its service and policies they don't like.

Life insurance companies in New England, meanwhile, are being sounded out on participating in a \$10 million loan to the New Haven to meet the cost of restoring its lines after the catastrophic August floods.

A strike vote will be up for discussion when BLF&E general chairmen meet in Chicago September 21. Union action was prompted by "unsatisfactory developments" in negotiating a 28 cents an hour wage increase for yard-service enginemen who convert to a 40 hour week.

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Shot peening of locomotive springs is relatively new. And every test over run on its advantages shows that rigidly controlled shot peening extends a spring's life from 2 to 20 times.

In addition, all Electro-Motive coil springs are magnatived to catch imperfections not visible to the naked eye—and are color-coded to indicate load-carrying characteristics, so similar springs will be used together. This helps ensure a better-riding truck and maximum spring life.

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Section 22 Rates Compensatory

So says Defense Department, reviewing its experiences with them; approves special filing rule proposal

The Defense Department, in a review of its experience with Section 22 rates, stated that "in a majority of instances the per car mile earnings of Section 22 traffic are higher than those applicable on tariff rates governing com-

mercial shippers.'

The review, prepared under Earl B. Smith, director of transportation and communications, Office of the Assistant Secretary of Defense, went on to endorse the proposal of an Interstate Commerce Commission examiner which would require filing of Section 22 quotations with the ICC at the same time the rates are filed with the government agency to which they are offered (Rail-

way Age, August 1, page 11). Effect of this special filing rule, the review stated, would be to "reduce to a minimum some of the abuses that have become associated with the use of Section 22 as a rate publishing

medium."

Among these "abuses," the review reported, are: The weakening of transportation preparedness for defense through unsound use of the section by carriers for competitive rea-sons; and "a tremendous burden" on military traffic agencies resulting from "multitudinous, voluntarily submitted

rate tenders" where carriers seek to meet competition.

The advantages of the section, however, include the following, according to the Defense Department review: Quick establishment of rates, rules and regulations; retroactive application or cancellation of the quotation where justified; maintenance of security in shipments of classified materials; and freedom from burdens on shippers since the rates "are fully compensatory to the carriers."

As to the last advantage, the review said "Department of Defense rate negotiations are conducted in accordance with sound freight rate-making principles. An examination of these negotiations and the resulting rate adjustments will definitely disclose that the transportation charges as provided by adjusted rates are fully compensatory to the carriers" and, in the main, produce car mile earnings above those earned through commercial tariffs.

The review noted that this important contention is corroborated by a report on Section 22 quotations made by the ICC's Bureau of Transport Economics and Statistics in its August "Transport Economics" (Railway Age, August 29,

page 11).

Repeal of the section would result in transportation of military property "at unreasonably high rates" because of the urgency involved, the review stated. Deprived of the adjustment provisions of the section, the review stated, the military services would be forced to litigation and proceedings before the ICC to obtain adjustments with resulting need for additional government traffic personnel. Additionally, the review stated, repeal of the section would greatly increase the duties of the commission.

Mechanical Groups Told How a Man Gets Ahead

Five guideposts for becoming a successful executive were offered to mechanical officers at last week's meeting of four railroad associations at Chicago.

At a joint meeting of the four groups, W. M. Keller, executive vicechairman and director of research for the AAR's Mechanical Division, labeled a mechanical officer as "a sort of combined engineer, scientist, production expert and personnel manager. But, he added, "we seldom find him in high executive positions.'

Mr. Keller said more emphasis on formal education, a greater understanding of what goes on in other departments, more knowledge of the railroad, better means of expression and willingness to accept criticism cheerfully are attributes that will help a man get

Other speakers at the Chicago meetings included ICC Commissioner Owen Clarke; F. S. Hales, president, Nickel Plate; W. T. Rice, president, Rich-mond, Fredericksburg & Potomac, and D. A. Fawcett, vice-president, New York Central.

The railroad officers discussed details of the Cabinet Committee Report on Transportation, submitted to President Eisenhower last April. They called for "all-out" railroad support of the report's major provisions, including, as Mr. Rice pointed out, the one that would give all common carriers new

freedom in rate making.

Commissioner Clarke discussed the impact of new operating practices on safety, pointing out that "the desire to progress is not a license to cut corners. He said responsible railroad officers must see that new practices adopted for operating economies do not adversely affect the safety of travelers or employees.

The railroad organizations meeting in Chicago were the Air Brake Association, Car Department Officers, Locomotive Maintenance Officers Association, and the Railway Fuel and



JUST EIGHT DAYS after fabrication began on a job which normally would take several months, U.S. Steel's American Bridge Division completed and shipped two 109-ft girders to re-

place an Erie Railroad span washed out by Hurricane Diane's floods in August. Workers at the division's Ambridge, Pa., plant are shown saying "goodbye" to the girders.

Traveling Engineers Association. A complete report of the convention will appear in the November issue of Railway Locomotives & Cars, companion magazine to Railway Age.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended September 10 totaled 706,575 cars, the Association of American Railroads announced on September 15. This was a decrease of 87,617 cars, or 11%, compared with the previous week; an increase of 105,050 cars, or 17.5%, compared with the corresponding week last year; and a decrease of 3,979 cars, or 0.6%, compared with the equivalent 1953 week.

Loadings of revenue freight for the week ended September 3 totaled 794,-192 cars; the summary, compiled by the Car Service Division, AAR, follows:

For the week ended Saturday, September 3 District 1955 1954 1953 Eastern 123,087 108,194 131,803 24 186,002 196,000 196,194 131,803 24 186,002 196,000 196,194 131,803 22 196,000 196,	REVENUE FI			
Eastern				
Alleghony 151,447 123,494 158,022 Pocahontos 62,956 48,519 59,510 Southern 125,907 116,609 123,246 Northwestern 142,485 115,991 142,748 Central Western 129,629 115,991 142,748 Central Western 256,681 57,062 58,027 Total Western 01stricts 330,795 291,676 326,508 Total All Roads 794,192 688,492 799,080 Commodities: Grain and grain products 52,382 52,341 48,731 Livestock 7,958 9,317 8,039 Coal 134,721 112,989 136,093 Coke 13,065 6,819 12,258 Forest Products 49,060 38,840 44,716 Cre 85,822 60,185 94,520 Merchandise 1.c.1 64,256 64,167 70,395 Miscellaneous 38,436 343,384 383,343 September 3 794,192 688,492 799,080				
Poccinortos 62,956 48,519 59,501				
Southern 125,907 116,609 123,246 Northwestern 142,485 115,991 142,485 115,991 142,485 115,991 142,485 115,991 142,485 115,991 142,485 115,991 142,485 125,733	Alleghany			
Northwestern				
Central Western Southwestern Southwestern Districts 129,629 118,623 125,733 Total Western Districts 330,795 291,676 326,508 Total All Roads 794,192 688,492 799,080 Commodities: Grain and grain products 52,382 52,341 48,731 Livestock 7,958 9,317 8,039 Coal 13,4721 112,989 136,039 Coke 13,065 6,819 12,258 Forest Products 49,060 38,840 44,716 Ore 88,382 60,185 94,520 Merchandise I.c.I. 64,256 64,167 70,395 Miscellaneous 38,436 343,343 383,343 383,343 383,343 September 3 794,192 688,492 799,080				
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Districts	Southwestern	38,681	57,062	58,027
Total All Roads 794,192 688,492 799,080 Commodifies: Grain and grain products 52,382 52,341 48,731 11vestock 7,958 9,317 8,039 Coal 134,721 112,989 136,903 10,055 6,819 12,258 Forest Products 49,060 38,840 44,716 Ore 8,832 60,185 94,520 Merchandise I.c.I. 64,256 64,167 70,395 Miscellaneous 384,368 343,384 383,384 SS,368 SA3,384 383,384 SS,565 September 3 794,192 688,492 799,080	Total Western		-	
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Grain and grain products products 52.382 52.341 48,731 Livestock 7,958 9,317 8,039 Coal 134,721 112,989 136,903 Coke 13,065 6,819 12,258 Forest Products 49,060 38,840 44,716 Ore 58,82 60,185 94,206 Merchandise I.c.I. 64,256 64,167 70,395 Miscellaneous 38,436 343,843 383,343 383,343 September 3 794,192 688,492 799,080	Total All Roads	794,192	688,492	799,080
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Merchandise I.c.I. 64,256 64,167 70,395 Miscellaneous 384,368 343,834 383,518 September 3 794,192 688,492 799,080				
Miscellaneous 384,368 343,834 383,518 September 3 794,192 585,492 799,080				
September 3 794,192 689,492 799,080				
	Miscellaneous	384,368	343,834	383,518
	September 3	794.192	689,492	799,080
	August 27	791,977	676,698	818,461
August 20 780,863 678,624 817,446	August 20	780,863	678,624	817,446
August 13 775,397 685,272 807,622	August 13	775,397	685,272	807,622
August 6 765,452 667,592 785,349	August 6	765,452	667,592	785,349

Cumulative total, 35 weeks24,940,518 22,530,509 26,149,327

Competitive Transport

Intercity Truck Tonnage Up 14% in Second Quarter

Intercity truck tonnage reached a record high of 62,997,750 tons of freight hauled in the second quarter of 1955 according to the American Trucking Associations.

This figure, ATA said, surpassed the previous second quarter record set in 1953 by 6.2%. The figure was 14% higher than the second quarter tonnage for 1954, ATA announced. This marked the third consecutive quarter in which intercity common and contract carriers hauled more tonnage



THESE VESTIBULE VENDORS have won favorable passenger reaction since being installed in parlor-lounge cars of the Kansas City Southern's "Flying Crow" trains between Kansas City, Kans., and Port Arthur, Tex. The self-service machines offer soft drinks in five flavors, coffee, sandwiches, pies and rolls, the prices for which are moderate.

than in the corresponding quarter of the previous year, the announcement stated.

Carriers of general freight accounted for about half the total tonnage, showing a 13.5% increase over the second quarter of 1954, ATA said, while liquid petroleum carriers who hauled about a fourth of the total tonnage, registered a 9.0% gain.

Bus Operators Face Cut in Revenues

Operators of the nation's buses, faced with a drop in revenues and a higher operating ratio, must search for ways to capture more business if they are to survive, ICC Commissioner Owen Clarke said last week.

In a speech before the National Association of Motor Bus Operators at Chicago, Commissioner Clarke said the most important single thing bus operators can do is "improve upon the quality of the transportation service you sell."

"Based upon complaints received by the ICC, it seems quite apparent that you are not uniformly providing the kind of service the traveling public expects or is entitled to," the commissioner declared.

He listed five categories of complaints: Discourteous and unreasonable drivers; dirty and unsanitary buses; dirty and unsanitary terminals—particularly rest rooms—and inadequate food facilities; delays in transit caused by breakdown of equipment: advertising and selling tickets on through, air-conditioned buses and failing to furnish that service.

The commissioner said complaints about drivers indicate that "all too frequently" passengers are left stranded at intermediate stops by buses departing before the announced time, or because the driver failed to check his loading.

Complaints about unsaritary buses have been of "considerable concern" to the commission, Mr. Clarke continued. He suggested that every carrier set up corrective programs. As to delays caused by equipment failure, he said complaints are becoming more frequent and "may indicate a lack of adequate maintenance programs on the part of some carriers."

"Your industry must do everything within its power to remove the causes of complaints," the commissioner declared. "By giving thoughtful aitention to these difficult operational problems I sincerely believe you have a genuine opportunity to regain a substantial amount of lost patronage, or, at least, to prevent any further diversion of traffic."

Earlier in his remarks. Commissioner Clarke had noted that operating revenues of Class I intercity motor carriers of passengers fell from \$403.4 million in 1953 to \$368.8 million in 1954. a drop of 8.6%; the number of revenue passengers declined 12.5%, and the operating ratio increased from 89.9% to 91.5%.

AAR's Hale Says Truckers Should Pay for Road Use

A spokesman for the Association of American Railroads told a San Francisco audience September 13 that 55% of California highway costs comes from designs needed to support heavy

But, he declared as he urged equitable road financing, there are only 700,000 heavy trucks in the country, slightly more than 1% of the 58 million motor vehicles on the nation's highways.

The spokesman was Hal H. Hale, highway transportation assistant to the vice-president of the AAR, for 12 years executive secretary of the American Association of State Highway Officials. He was addressing the Commonwealth Club of California.

Stating that gasoline taxes are an inadequate method of distributing road costs, he said it is only "common justice" that heavy vehicles should pay taxes according to the benefits they derive from road use. He said a truck with a 30-ton load and getting five miles to the gallon of fuel, obtains for the tax it pays on each gallon 150 tonmiles of highway use, roughly five times as much as a passenger auto running about 15 miles per gallon.

Mr. Hale said truckers took a "dim view" of pay-as-you-go highway legislation in the recent session of Congress but added that the "Federal Government not only has the right but it also has the responsibility to set up a sound financing procedure for such tremendous expenditures, and that procedure must of necessity include an adequate user charge on those who operate over the highways for private gain."

Operations

PRR's Common Carrier TOFC Has Doubled

Patronage of the Pennsylvania's TrucTrain service by motor common carriers more than doubled in the first six months of operation, according to the company which serves as coordinator between the railroad and the truckers.

Eugene F. Ryan, president of the Rail-Trailer Company, said 1,371 motor carrier trailers were handled on Truc-Trains between Chicago and New York or Philadelphia in August.

"Adding the traffic now being handled between the two Eastern cities and St. Louis, which started in May, the motor carriers loaded a total of 1,578 trailers on PRR flat cars in August," Mr. Ryan said. This was, he added, a 54% increase over the previous peak month of June.

In the week of August 29 alone, nearly 500 trailers were handled, Mr. Ryan continued. He said this high mark "foreshadows a volume of business this fall which we believe will surpass anything thus far developed by any railroad in the field of trailer-on-flat-car service."

The PRR, meanwhile, has added

Pittsburgh to the list of cities at which TrucTrain service is available to motor common carriers. This latest extension was on September 14.

An order has also been placed by the PRR for 100 additional 75-ft flat cars for use in TrucTrain service (Railway Age, September 5, page 10).

PRR Extends TrucTrain for Common-Carrier Truckers

Hauling highway trailers of commoncarrier truckers on railroad flat cars between Pittsburgh and Chicago, St. Louis and New York was begun by the Pennsylvania September 14.

This, the second extension of Truc-Train service for common-carrier truckers since it was inaugurated last March, is in addition to the TrucTrain service in which the PRR carries its own highway trailers on flat cars between these cities. Previously, common-carrier Truc-Train service was provided between New York, Philadelphia and Chicago and St. Louis.

Service between Pittsburgh and New York and Chicago is overnight, with second-morning arrival being provided in the Pittsburgh-St. Louis service.

The Rail-Trailer Company, headed by Eugene F. Ryan, is acting as liaison between truckers and the PRR in the service. Rail-Trailer also performs terminal services, including loading and unloading trailers.

To handle an increased volume of trailers, the PRR's Island Avenue yard in Pittsburgh has been altered and its facilities expanded. Terminal for trailers for the New York area will be the

new TrucTrain facility at Meadows yard, Kearny, N.J. In Chicago, new facilities of the 55th Street yard will be used. For the St. Louis area, the terminal will be the Rose Lake yard in East St. Louis, Ill.

Trailers from Pittsburgh to New York or Chicago leave the Island Avenue yard in the afternoon on two fast freight trains started last spring to move common-carrier trailers in through service. They arrive at their destinations the next morning. Trailers for Pittsburgh from Chicago and New York leave late at night and arrive at Island Avenue yard the next afternoon. Trailers between Pittsburgh and St. Louis leave the yards in the evening and arrive at their destination the second morning.

B&M Uses 64 RDCs to Make Up 984 Trains

The Boston & Maine recently received its 64th rail diesel car from the Budd Company, making the railroad the largest operator of Budd RDCs in the world. The B&M now uses the 64 cars to operate 984 trains a week in what the road calls its "Highliner" service.

It is estimated by the road that use of the new equipment will reduce operating costs about \$1,700,000 a year and will permit retirement of 235 passenger coaches and 60 steam locomotives.

Under operating schedules set up for the new cars, they will operate over all sections of the road, giving almost solid operation on the midday



BOSTON & MAINE RECEIVES ITS 64th Budd-built "Highliner"—left to right: Cameron McKay, B&M conductor; Robert A. Sherman, Budd sales manager; P. J. Mullaney, B&M vicepresident—traffic; E. F. Sinclair, assistant to executive vice-president,

B&M; H. Alpert, B&M vice-presidentgeneral counsel; F. W. Rourke, B&M vice-president—operating; L. J. Kiernan, B&M executive vice-president; G. F. Glacy, B&M vice-president—accounting and finance; and Richard W. DeMott, public relations, Budd.



TODAY AND YESTERDAY were coupled in Louisville recently when the L&N displayed the first of 13 new 60-seat coaches now being delivered. (That's "Yesterday," just visible at the right.) The new coaches, costing \$1.8 million, are being placed in

service this month and next, in the "Humming Bird." the "Pan-American," and the "South Wind." Interiors feature foam-rubber seats and a frosted glass partition at mid-car which is decorated with photographic murals.

and Sunday schedules. On long-distance runs, the cars are in service between White River Junction, Vt., and Boston; Troy, N.Y., and Boston; Portland, Me., and Boston; North Conway, N.H., and Boston, and Concord, N.H., and Boston. In the shorter commuter service, the "Highliners" run between Boston and Rockport, Mass., Lowell, Haverhill, Fitchburg, and Portsmouth, N.H.

Law & Regulation

Cabinet Report Hearing To Be Held This Week

With Congressional hearings on the Cabinet Report on Transportation Policy scheduled to start today, the Association of American Railroads has distributed a booklet outlining the proposals made in the report.

The booklet sets forth what it holds to be the main effects that adoption of the proposals would achieve and attempts to answer or refute several of the questions and criticisms raised in

connection with the report.

The report, made at the request of President Eisenhower under the direction of a committee of cabinet members headed by Secretary of Commerce Weeks, recommended to Congress a series of changes in the National Transportation Policy. As detailed in Railway Age, April 25, page 49, the report called for a new approach to transportation regulation based on more rate-making freedom to reflect changes in the transportation industry.

A hearing to be conducted by Congressman Oren Harris, Democrat of Arkansas, is scheduled to be held on the report today. Leading off the testimony will be Secretary Weeks who may be accompanied by other cabinet

members and a representative of the Office of Defense Mobilization. Following the government appearance, representatives of the transportation industry are scheduled to testify as follows, though not necessarily in this order:

J. Carter Fort, vice-president and general counsel, AAR; James F. Pinkney, general counsel, American Trucking Associations; Chester C. Thompson, president, American Waterways Operators; and Giles Morrow, Freight Forwarders Institute.

The AAR's booklet defended the proposals of the Cabinet Report, stating that the railroads would be given no rights that other forms of transportation do not or would not have. Further, it states, the Interstate Commerce Commission would, under the proposals maintain its authority to control minimum and maximum rates while allowing greater freedom in competitive ratemaking. Basis for the Cabinet Committee's recommendations, the booklet reports, is that the government has failed to "adjust its regulatory capacity to changed conditions" with the result "rate maladjustments" have developed.

Equalization Seen as Key Matter Facing RR Tax Men

Tax equalization, or the lack of it, is "the most important subject confronting a railroad tax man today," according to Max L. Boydston, tax commissioner of the Milwaukee.

Mr. Boydston, in a speech at Bellvue, Iowa, said the inequity between assessment of railroad property and that of property in general is comparable to the "grossly inequitable" tax treatment between railroads and their competitors.

Among factors which have produced this situation, Mr. Boydston said, is the general policy of assessing both farm lands and city and town property at their prewar valuation, while increasing "substantially" the assessed values of railroad property.

In Iowa, farm real estate valuations increased only 8.07% between 1941 and 1954, he said. The valuation of city and town lots increased 9.28% in the same period, while railroad property valuation went up 25.9%.

Because of "systematic and general

Because of "systematic and general undervaluation of farm and city properties, the railroads of Iowa are paying taxes on a greater proportion of actual value than are other types of property generally," Mr. Boydston declared. "Railroads are carrying an unjust proportion of the burden of supporting schools and local government."

Mr. Boydston cited Iowa merely as one example. In one neighboring state, he said, the director of revenue admits that property is assessed at 53% of true value, while railroad property is assessed at 85%; in another state, the percentages are 30 and 65.

"In practically no state do we feel reasonable equity exists," he declared. Mr. Boydston is currently serving as

Mr. Boydston is currently serving as president of the Western Association of Railway Tax Commissioners,

Equipment & Supplies

Air-Conditioned Car Tested on NY Subway

New York's first air-conditioned subway car was tested under service conditions on September 8.

For trial and demonstration purposes, the test car was operated as one unit of a regular nine-car train between Times square, Manhattan, and Main street, Flushing, on the Flushing line of the New York City Transit Authority's IRT division. To simulate normal operating conditions as closely as possible, all three passenger doors on the side of the car away from station platforms were opened at each of the 19 intermediate stops on the 10-mile, 45-minute, combination subway-elevated run; while the car was occupied approximately 50 representatives of the Transit Authority, equipment manufacturers and press.

Dry-bulb temperature inside the car remained constant at 71-72 deg. Comparable temperature in an adjacent car, equipped only with normal air circulating fans and carrying fewer passengers, varied from 79 to 85 deg.

Air-conditioning equipment consisted of four 1½-ton units built into the space between the inner ceiling and outer roof of the car. Each unit, fully self-contained, includes a motor compressor, a condenser, cooling coils and controls. Air is taken in through ceiling grilles adjacent to each conditioning unit; passed through cooling coils; dehumidified; and distributed back into the car body through specially designed air deflectors at the base of each unit. These deflectors are

built to circulate the cooled and dehumidified air throughout the car.

The conditioning equipment was supplied by the Safety Car Heating & Lighting Co., New Haven, Conn., working with the Carrier Corporation, Syracuse, N.Y., and Transit Authority engineers. The car itself was of the R-15 type, built by ACF Industries, and placed in service in March 1950.

H. F. Kneen, president of Safety, estimated the cost of the air-conditioning units at \$700 each, plus installation, but said this figure could be materially reduced if the units were to be produced in substantial volume. He pointed out that, while four units would be sufficient for IRT cars, the larger cars operated on the BMT and IND divisions of the New York subway system would require six.

The test car will be continued in regular operation to determine its performance under full service conditions.

Sen. Morse Wants ICC to Investigate Car Shortages

Senator Wayne Morse, Democrat of Oregon, in a letter to Interstate Commerce Commission Chairman Hugh W. Cross, has called for "a very searching investigation" of alleged car shortages in Oregon.

He informed Mr. Cross that he has been informed of worsening shortages of cars needed by lumber shippers and stated that accusations had been made to him that the Southern Pacific is discriminating against these shippers in favor of others in California.

Such a practice would be one "that cannot be endured" if it actually exists, the Senator declared.

He urged the ICC to go into the car shortage and car repair situation and called for a complete reappraisal of the rail freight system. He declared that reports coming to him "lend strong support to the oft-repeated charge that the American railroads are concentrating too heavily on amassing profits and too little on rendering to the American public the kind of railroad service to which it is entitled."

Commissioner Cross' office reported that a reply to the Senator's letter will be drafted as quickly as possible. The car shortage situation was thoroughly aired before a subcommittee of the Senate Committee on Interstate and Foreign Commerce in July (Railway Age, August 1, page 7).

Plan for Atom Locomotive To Tour Country Proposed

Senator Butler, Republican of Maryland, announced last week that when Congress reconvenes in 1956 he will introduce legislation to authorize construction of an atom-powered locomotive.

He would have this locomotive play a similar role to that intended for President Eisenhower's controversial atoms-for-peace nuclear-powered ship. Instead of touring the world's ports, however, the atomic locomotive would tour the United States hauling an exhibit train illustrating peaceful uses for atomic energy.

Senator Butler's office reported that he had undoubtedly discussed the feasibility of the proposal during a recent European trip. The Senator is said to have been impressed by the average European citizen's knowledge of peaceful uses for the atom. He announced his plan on returning from the trip abroad, stating that the government should make a primary effort to educate Americans before going ahead with the atom-ship plan, his office reported.

Senator Butler did not reveal specific details as to who would build the locomotive, nor when, nor for how much. The Denver & Rio Grande Western and the Baldwin-Lima-Hamilton Corporation have been authorized by the Atomic Energy Commission to make a study and report on the technical and economic aspects of building and operating a nuclear-powered reciprocating engine for a locomotive (Railway Age, April 4, page 7).

FREIGHT CARS

The **Buffalo Creek**, owned jointly by the Erie and the Lehigh Valley, has ordered 1,000 40½-ft box cars at a



FEWER PERSONAL INJURIES is the Union Pacific's goal in adopting this new all-metal portable step for outfit cars. Developed by the UP to replace makeshift wooden steps, the new step will be placed on some 500 outfit diners, office cars and bunk cars. The standardized unit is light, and can be knocked down for movement. It attaches to cars with swivel-type hooks that fasten to the vertical hand-holds on each side of the car door. Research Engineering Associates built the steps to UP specifications.

cost of over \$7,000,000. Half the ears will be built by ACF Industries and half by Pullman-Standard.

The Erie has ordered 500 40½-ft box cars from General American at a cost exceeding \$3,500,000. Delivery is scheduled for the second quarter of 1956.

The **New Haven** is inquiring for 200 flat cars for hauling highway trailers.

PASSENGER CARS

The Canadian Pacific has ordered two additional rail diesel cars (one RDC-1 and one RDC-3) from the Budd Company. When the cars are delivered, the CPR fleet of RDCs will consist of 16 units. The two new cars, plus the three ordered previously—one RDC-1, one RDC-2 and one RDC-4 (Railway Age, August 22, page 8)—will be used as follows: One RDC-2 and one RDC-4 will operate as a two-car train between St. John, N.B., and Edmunston, making one 492-mile round trip daily. Another two-car train, consisting of an RDC-1 and an RDC-3, will operate in accelerated service between Montreal and Quebec, cutting the running time from 5 hr and 15 min to 4 hr and 10 min. A single RDC-1, operating as a train, will make one round trip daily between Victoria, B.C., and Courtenay on Vancouver Island, a distance of 279 miles.

The Missouri Pacific has ordered six sleeping cars from the Budd Company at an estimated unit cost of \$260,000. The lightweight cars will be of the six-bedroom, ten-roomette type.

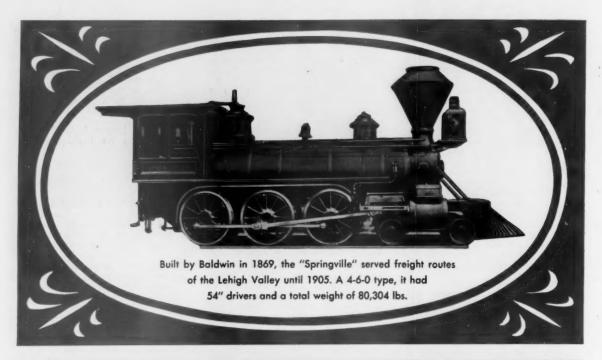
LOCOMOTIVES

The Santa Fe has ordered 50 dieselelectric units. Thirty-two 1,750-hp road switchers will be built by Electro-Motive, and eighteen 1,200-hp yard switchers will be built by Fairbanks, Morse. Deliveries are expected to be completed by August 1956.

The Utah has ordered one 1,600-hp diesel-electric road-switching locomotive unit from Alco Products at a cost of \$205,000. Delivery, scheduled for mid-October, "will complete dieselization of the Utah's operations." L. A. Kane, president and general manager, told Railway Age.

SPECIAL

The Lehigh Valley has ordered 27 33-ft trailers from the Fruehauf Trailer Company at an approximate cost of \$130,000. Twenty-four of the trailers will be the general van type and three will be insulated. The trailers, delivery of which is expected within 60 days, are for trailer-on-flat-car traffic between the New York-north New Jersey





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Supply Trade

GRS Announces Personnel Changes

H. W. Chamberlain, president since 1952, is elected chairman of executive committee; A. E. Heimbach president

Herbert W. Chamberlain, president of the General Railway Signal Company since 1952, has been elected chairman of the firm's executive committee. Arthur E. Heinbach, executive vicepresident, has been elected president.

Mr. Chamberlain joined GRS in 1904, having been with its predecessor, the Pneumatic Signal Company, since gineer for the Pittsburgh & Lake Erie for several years. He was transferred in 1950 from western manager, with offices in Chicago, to Rochester, N.Y., as vice-president. He was later elected executive vice-president, holding that position until his elevation to the presidency. Mr. Heimbach received a B.S. degree in electrical engineering from Pennsylvania State University in 1924.

The following organization changes were announced by Mr. Heimbach:



P. W. Smith



Arthur E. Heimbach

1903. He became president of the General Railway Signal Company of Canada in 1920. Appointed assistant treasurer of GRS in 1927, Mr. Chamberlain became successively secretary, assistant to the president, sales vice-president, executive vice-president and president.

Mr. Heimbach joined GRS in 1941, after serving as principal assistant en-



Sydney W. Freeman

P. W. Smith, vice-president in charge of sales, has had his jurisdiction extended to include foreign as well as domestic sales. Sydney W. Freeman, formerly sales manager, is appointed executive assistant to the president.



John W. Porter

sales manager, handling both domestic and foreign sales.

The Torman Company, Chicago, has announced appointment of Glenn Sudderth & Assoc., 423 Collier Road, N.W., Atlanta, Ga., as southeastern representative for sale of Torman electrical equipment for diesel locomotives.

E. C. McClintic has been appointed assistant to president, Chipman Chemical Company.

Robert L. Carmichael and Kenneth D. Hughes, sales representatives of Ramapo Ajax Division, American Brake Shoe Company, have been appointed district sales managers at Houston and New York, respectively.

Headquarters of the central Atlantic coast technical field section of International Nickel Company's development and research division have been moved to 1150 York road, Abington, Pa., from 67 Wall street, New York.

People in the News

Hamm Resigns as ICC'S Managing Director

Edward F. Hamm Jr., managing director of the Interstate Commerce Commission since August 1953, has resigned effective September 30.

Commission since August 1993, has resigned effective September 30.

Publisher of "Traffic World" and president of the Traffic Service Corporation, Mr. Hamm will resume his duties in those capacities October 1.

In a letter of appreciation on behalf of the commission, ICC Chairman Hugh W. Cross commented that during Mr. Hamm's service—the post was newly created when he was appointed to it—the commission had accomplished some 30 changes in its internal organization. Many of these followed the recommendations of the Wolf Management Engineering Company, he said, adding (Continued on page 16)



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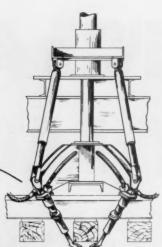
SINCLAIR RAILROAD LUBRICANTS

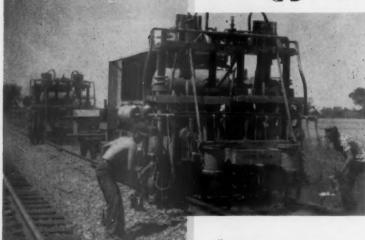
For further information, contact Sinclair Refining Company, Railway Sales, New York, Chicago, St. Louis, Houston.



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FRANCIS C. MACDONALD, whose appointment as chief of the Section of Railroad Safety in the ICC's Bureau of Safety and Service was reported in Railway Age, September 5, page 7. A resume of Mr. MacDonald's career appeared in last week's issue, page 8.

(Continued from page 13) that he is "especially proud of the progress that has been made."

O. A. Matthews Resigns as Transport Commissioner

Overton A, Matthews has resigned from Canada's Board of Transport Commissioners to resume private practice in the management consulting field. Although the resignation was effective August 31, Canadian Prime Minister St. Laurent announced that "for a mutually convenient period thereafter" Mr. Matthews has agreed to act in a part-time consulting capacity to the board.

Organizations

The American Council of Railroad Women will hold its annual meeting at the Waldorf-Astoria, New York City, October 3-5.

The Railroad Human Relations Group, an informal organization of men interested in problems of human relations, training and communication will hold its next meeting, October 5-7, at the Seigniory Club, Montebello, Que. Supervisory selection and training will be the subject of discussion during the sessions. A dinner address by Lionel A. Forsyth, president, Dominion Steel & Coal Co., will be a feature of the meeting. A panel discussion will be held on the "Function of Personnel Administration." Panel members include: E. H. Hallman, director of personnel, Illinois Central; L. W. Horning vice-president-personnel, New York (Continued on page 62)



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When you consider all the uses for air on a modern train, no single air device is more important than the air compressor.

The Westinghouse Air Brake 3CD compressor, shown here, is unsurpassed for reliability. Millions of hours of operation have proved it to be a most dependable compressor for railroad use.

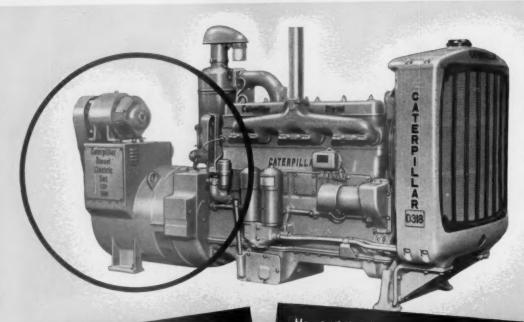
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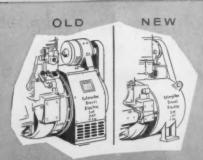


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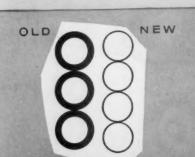
Heart of the new line of Cat Diesel Electric Sets, providing in one package the best features of self-regulated and externally-regulated generator plants—you get more for your money.

Easily paralleled with other generators now in use.

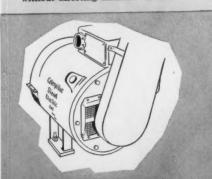
There is a big difference in size between the old and new Caterpillar Generators.



New insulation permits more compact design—exaggerated comparison in illustration below.



New design saves space. Leads can be taken from side, back or top without affecting machine width.



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- 3 ADJUSTABLE FOR SPECIAL CONDITIONS. During initial installation, the terminal voltage and voltage "droop" can be adjusted to meet the special conditions of the application. After that, the adjustments are locked and no further adjustments are necessary.
- 4 EASY TO INSTALL. No complicated switchgear or external voltage regulators are needed.
- **5 VERSATILE IN APPLICATION.** Easily paralleled with other generators now in use.
- 6 SMALL AND COMPACT. Occupy less space than other generators. A reduction in frame size, close coupling, top-mounted exciter results in a shorter over-all package length.
- 7 BIG ELECTRICALLY. Motor starting ability capacity to handle the surge of heavy loads.
- 8 EASY TO MAINTAIN. Heavy-duty, single-bearing, close-coupled construction. The single bearing is easily accessible and is lubricated from an oil reservoir that requires filling only once a year.
- 9 RUGGEDLY CONSTRUCTED. Heavy-duty, laminated pole rotor for improved operation and increased rotor life.
- 10 DESIGNED FOR LONG LIFE. Built to match the long life of the Caterpillar Engine powering them.

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Now Caterpillar introduces another new concept in diesel-electric power $-\,a$ new and better generator.

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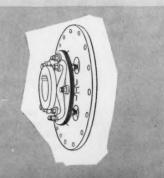
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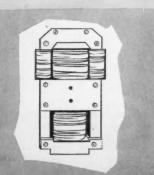
CATERPILLAR *



Disc-type coupling and single-bearing design save space. Single bearing is easily accessible.



The "regulator" of the new Caterpillar Generator. No moving parts — compact — reliable.

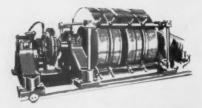


The control panel—adjustments locked at installation. No further attention required.

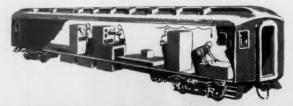


Clasp...Rotor... Only ASF designs

ONLY ASF IS EQUIPPED TO DEVELOP AND BUILD ALL THREE



ASF Brake Test Dynamometer permits close-range laboratory study of braking action . . . This unique machine can duplicate the stresses and kinetic energy of stops from 150 mph on down—service or emergency—as well as low or high speed drags.



ASF Brake Test Car furnishes final, on-line proof of brake design and brake performance . . . Over 1800 brakeway stops have been made to date with this ASF car—fitted at various times with ASF clasp, rotor and combination brakes.

or Combination and builds all three types of brakes

Railroad men may well ask why only one company—American Steel Foundries—is prepared to build any type of brake.

The answer is experience. Not just the experience of building brakes for 35 years, but the kind that comes from being the only company equipped to do a thorough, objective job of brake development. The Brake Dynamometer and the ASF Brake Test Car, shown on the opposite page, are typical of the specialized equipment it takes to do that job.

But it takes more than specialized equipment. It takes men with the skill to design such equipment, with the technical background to use it properly, with the experience to interpret research data in practical terms. There's no easy way to design and develop many different types of brakes; no substitute for testing each brake under conditions that are identical with on-line train operation.

Ask your ASF Representative to show you the results of these on-line tests. That's the sure way to find the type of brake with the characteristics you want. Only at ASF can you choose the brake that's right for your road.



AMERICAN STEEL FOUNDRIES

410 North Michigan Ave., Chicage 11, III.
Conadian Sales: International Equipment Co., Utd., Montreal, Guebes

Look for the MINT



MARK of fine products



Developed by Research Special ASF-built machinery brings on-line brake problems into the laboratory for close-



Tested On-Line . . .
The completely equipped ASF
Test Cor serves as a "proving
ground" for new develop-



The new TELETYPE 28 Printer offers these outstanding features...

- FEATHERWEIGHT CARRIAGE ... quick, dependable carriage return even at 100 wpm—needs no extra line signal.
- TYPEBOX PRINTING ... instantly removable Typebox for changing type or cleaning.
- 3. SELECTOR...high speed, low current pulling magnet selector.
- 4. POWER KEYBOARD...light, uniform key touch gives new operator ease, efficiency.
- 5. CONTROLS . . . all at front, all by keyboard button, for operator's convenience.
- SIGNAL GENERATOR . . . single contact design . . . polar or neutral signals.
- ALL METAL CLUTCHES... No slip... no idling load... infrequent lubrication.
- BUILT-IN STUNT BOX ... offers unlimited variety of signaling, switching, control operations.



The new high speed Teletype 28 printer marks a new era in the field of printing telegraphy. It is a machine engineered not only to meet today's most complex communication problems... but with built-in facilities to solve new problems as they arise.



If you would like complete information on this new Teletype Printer, write to our new customer service office: Teletype Corporation, Dept. RA9, 4100 Fullerton Ave., Chicago 39, Ill.



Here's a diesel lubricant that successfully meets the tough demands of today's higher horsepower ratings

CONOCO DIESEL OIL "R"

FIGHTS OFF FRICTION AND CORROSION

PREVENTS
HARMFUL
ENGINE
DEPOSITS

RESISTS OXIDATION

Designed specifically for lubricating locomotive diesel engines, Conoco Diesel Oil "R" is made of choice, solvent-refined base stocks to give it exceptional endurance and stability in the presence of heat. Diesel Oil "R" is fortified with oxidation and corrosion inhibitors. Lead, silver, and other special alloy bearings get the utmost protection against corrosion. Anti-foam and rust inhibitors are also included in this finest of Diesel Engine Oils.

Effective detergent action assures clean, free piston rings and minimum valve stem deposits.

The exceptional high stability of Conoco Diesel Oil "R" assures low carbon deposits throughout the engine. Diesel Oil "R" provides excellent filterability, giving long trouble-free oil life.

Conoco Diesel Oil "R" meets the specification requirements of all major diesel locomotive builders.

Conoco Sales Engineers, having years of railroad diesel experience, are available at all times. Laboratory analysis is available for solving your particular lubrication problems.

Conoco Railroad Products

Are you familiar with these other dependable Conoco products . . . specified by the Nation's leading railroads?

Conoco CAR OIL "GH" (Additive Type)

Conoco Super MOTOR OIL
Conoco RAIL JOINT SPRAY
Conoco COGREASE

(traction gear lubricant)

Conoco <u>Super</u> LUBE (all-purpose grease) Conoco WEED SPRAY OIL



CONTINENTAL OIL COMPANY

Railway Sales Division • 400 W. Madison St., Chicago 6, Illinois • Lincoln 9-2666 @1955, Continental Oil Company



SAVES FULL COST IN FUEL ALONE WITHIN 2 YEARS!

There's no doubt about it—facts are facts. You can quickly see for yourself! Locate on scale at bottom of graph your own particular area temperature. Now, project upward to intersection with curve and then in straight line to margin at right. See how much fuel Watchman Heaters save, compared with Diesel "idling."

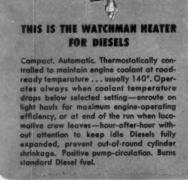
When outside temperature is 30°F., the Watchman saves 3.06 gallons per hour—\$3.06 on a 10-hour layover where you buy Diesel fuel at 10¢ a gallon. At 70°, this becomes \$3.32...at zero, \$2.85. Even at 50° below zero you save \$2.25 when a Watchman Heater, instead of "idling," keeps Diesels warm and ready to go.

Let's not even talk about the other Watchman Heater economies: (1) Reduced Fuel Handling, On-Line Fuel Transportation, Storage...(2) Lower Engine Maintenance...(3) Elimination of Diesel Attendants During Non-Operating Periods...(4) Less Sludge Formation, etc.—all of which may total far more than the fuel savings. Watchman Heaters have proved in nation-wide use they're one of today's best railroad investments.

Wire Vapor Chicago, collect, today. Please mention No. 46.
Ask for Bulletin No. 588, "A Baby Sitter for Diesels."

VAPOR HEATING CORPORATION

80 E. Jackson Blvd., Chicago 4, Illinois

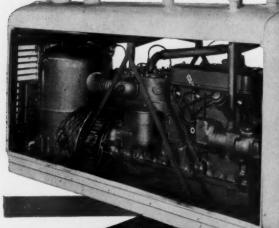


NEW YORK • ST. PAUL • WASHINGTON • PHILADELPHIA • ATLANTA • SAN FRANCISCO • HOUSTON • RICHMOND • LOS ANGELES • ST. LOUIS

IN CANADA: Vapor Car Heating Co. of Canada, Ltd., 65 Dalhousie St., Montreal 3, Quebec

Vapor Export Corporation · Vapor International Corporation, Ltd., Room 1400, Railway Exchange Bldg., Chicago 4, Illinois

Now! a **PACKAGED** AIR SUPPLY for ANY Jordan Unit--New or Old!



Supplies correct
air pressure
and volume for
PROPER
OPERATION

Complete... Ready To Install

PACKAGE

INCLUDES:

COMPRESSOR, ENGINE, FITTINGS,

HOSE and VALVES

Plus Detailed Installation

Data for YOUR Specific Unit

The new Jordan Packaged Air Compressor Unit, by providing a dependable, independent air supply, insures maximum operating efficiency of Jordan Spreaders, Ditchers and Snowplows. In addition, you gain greater flexibility, because any motive power can be used with Jordan equipment, regardless of its air-producing capacity.

We supply everything necessary for the installation, including detailed instructions and drawings for your specific equipment. Your Mechanical Department can make the installation with minimum delay and labor cost.

For further details, call or write us, or contact your nearest Le Roi Co. Railroad Representative.



old

Regardless of the age of your Jordan, the new Packaged Air Supply Unit can be installed quickly and easily.

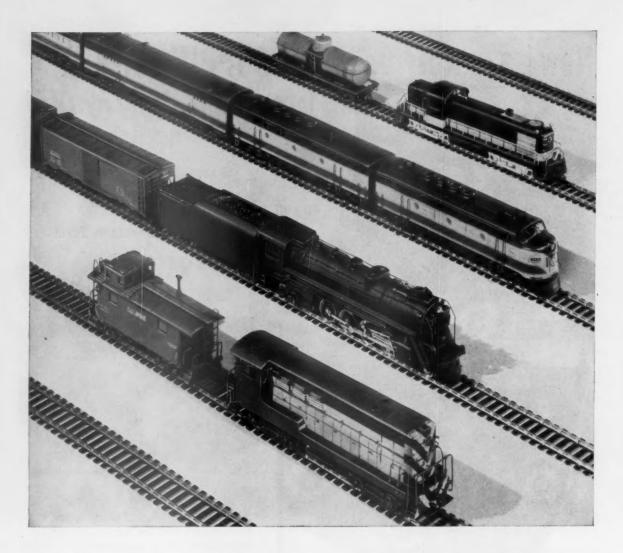


new

Insure maximum performance and utility from newer Jordan Units.

O. F. JORDAN COMPANY

WALTER J. RILEY, CHAIRMAN OF THE BOARD ...



THE ONLY SYSTEM THAT CLEANS THEM ALL

There has long been a need in the railroad industry for an effective method of cleaning the exterior surfaces of diesel and steam locomotives, passenger coaches, and other rolling stock, regardless of contour—and yet, one which would do the job at minimum expense of labor, time, and materials. The Dearborn Pressure Cleaning System is the carefully planned answer to that demand.

It is a combined equipment-material system which incorporates a series of spray standards with water under pressure to clean all surfaces of the unit from trucks to roof. After preliminary wetting of the surface, a Dearborn acid detergent is applied by spray. This is followed shortly by a similar application of

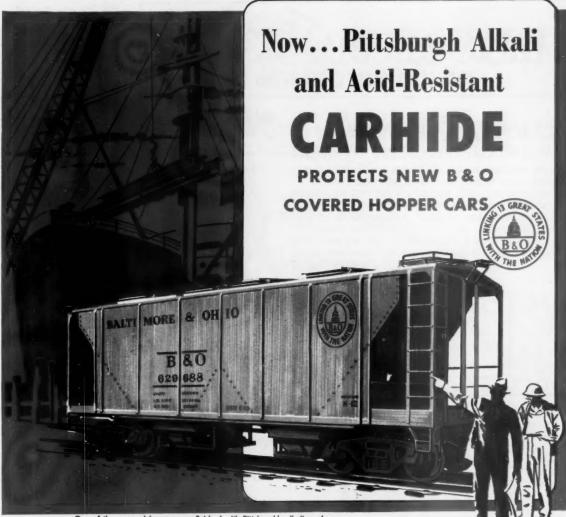
a Dearborn alkaline detergent. Next, a spray of water under extremely high pressure rinses away the dirt and soil film previously loosened by the detergents. This spray method of cleaning reaches all the "hard-to-get-at" nooks and crannies on switchers, tank cars, cabooses, and other units of irregular contour—and cleans them thoroughly.

In addition, Dearborn has recently perfected a process for spray-cleaning coaches that eliminates streaking on exterior surfaces and windows.

Because of its performance efficiency and its lower cleaning cost per unit, the Dearborn Pressure Cleaning System is fast becoming standard with America's leading railroads. Write for information.

Dearborn PRESSURE CLEANING SYSTEMS

DEARBORN CHEMICAL COMPANY, Merchandise Mart Plaza, Chicago 54, III.



One of the covered hopper cars finished with Pittsburgh's alkali- and acid-resisting CARHIDE for the Baltimore and Ohio Railroad Company.

PITTSBURGH'S alkali- and acid-resistant CARHIDE now makes possible, an entirely new degree of protection against the effects of cargoes which quickly destroy ordinary finishes.

This remarkable coating for covered hopper, refrigerator and tank cars has been used with great success by a number of leading railroads. It has been tested for periods of from one to six years with highly satisfactory results.

Such tests have demonstrated that ladings of soda ash, sulphur, phosphates, cement, lime, common salt, alkalis, crude oil and alcohol will not affect it. These have also shown high resistance to abrasion as well as to repeated scrubbing.

This type of CARHIDE dries as quickly as lacquer, permitting you to maintain one-day finishing schedules.

If your line has cars that are used to carry corrosive materials, it will pay you to investigate this alkali- and acid-resistant CARHIDE. Call on us for suggestions and advisory service that may save you time and money.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wisi, Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Torrance, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. Thresher Paint & Varnish Division, Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

Pittsburgh Railway Finishes For Every Need

CARHIDE—for wood and metal freight cars of all types.

Hot-Spray CARHIDE—provides twice as much paint in one application. LAVAX SYNTHETIC ENAMELS—

for locomotive and passenger cars.

STATIONHIDE — adds beauty and attractiveness to stations.

IRONHIDE—for iron and steel fixed properties.

SNOLITE—white fume-resistant paint for signs, crossing gates, fences and cattle guards.



PITTSBURGH PAINTS

PITTSBURGH PLATE GLASS COMPAI

IN CANADA CANADIAN PITTSRURGH INDUSTRIES LIMITED



STARTS WITH DEPENDABLE EXIDE-IRONCLADS!

SMOOTH, PROFITABLE FREIGHT MOVEMENTS DEPEND UPON EQUIPMENT ALWAYS READY TO ROLL. EXIDE-IRONCLAD DIESEL STARTING BATTERIES ASSURE QUICK BREAKAWAY AND FAST ACCELERATION OF ENGINE TO FIRING SPEED. THEY RESPOND INSTANTLY TO ALL POWER DEMANDS-LARGE OR SMALL...THEY PROVIDE AMPLE RESERVE POWER FOR POSITIVE OPERATION OF ALL CONTROL EQUIPMENT. LOW OPERATING COSTS AND EXCEPTIONALLY LONG LIFE MAKE EXIDE-IRONCLAD DIESEL STARTING BATTERIES, YOUR BEST POWER BUY-

AT ANY PRICE!



EXIDE-POWERED DOODLEBUG SPEEDS SHOP REPAIRS!

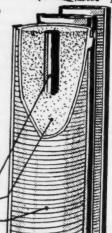
AT NEW YORK CENTRAL'S NILES, MICH., REPAIR SHOP THEY BUILT THIS IRONCLAD-POWERED "DOODLEBUG" TO MOVE SWITCHERS AROUND THE SHOP. THE "ENGINEER" KEEPS A FINGER ON THE CONTROL BUTTON _WALKS ALONGSIDE HIS POWERFUL, NOISELESS, FUMELESS HELPER. WHATEVER THE RAILROAD JOB (STARTING OR MOVING DIESELS), EXIDES CAN DO IT BETTER, MORE DEPENDABLY.

LET EXIDE HELP SOLVE YOUR DIESEL STARTING BATTERY PROBLEM. © CALL AN EXIDE SALES ENGINEER FOR FULL DETAILS. © WRITE FOR FORM 4843-ALL ABOUT MAINTAINING AND INSTALLING DIESEL STARTING BATTERIES.

GIVE IRONCLADS LONGER SERVICE LIFE!

FINELY SLOTTED TUBES INSIDE AN IRONCLAD KEEP THE ACTIVE MATERIAL IN FIRM CONTACT WITH THE CONDUCTING GRIDS OF THE POSITIVE PLATE. THUS, THE GRID IS PROTECTED ... THE ACTIVE MATERIAL IS KEPT IN CONTACT WITH THE GRID LONGER .. THE BATTERY'S WORK LIFE IS LENGTHENED. THE SLOTTED TUBES ALSO EXPOSE MORE ACTIVE MATERIAL TO THE ELECTROLYTE ... FOR GREATER POWER! RESULT: THE IRONCLAD'S ABILITY TO DO A DEPENDABLE JOB FOR A LONGER PERIOD OF TIME.

PROTECTED SILVIUM CONDUCTING GRID
COMPRESSED ACTIVE MATERIAL
SLOTTED RETAINER TUBE



IRONCLAD A

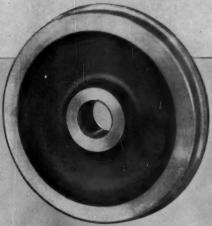
POSITIVE PLATE

Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

a friend in need

by Hungerford





We will be glad to send you enlarged copies of this Hungerford cartoon (withour advertising copy) for posting on your office and shop bulletin beards, or a cut for your company magazine, at cost.

Edgewater

Rolled Steel Wheels

Edgewater Steel Company

makers of

Draft Gears



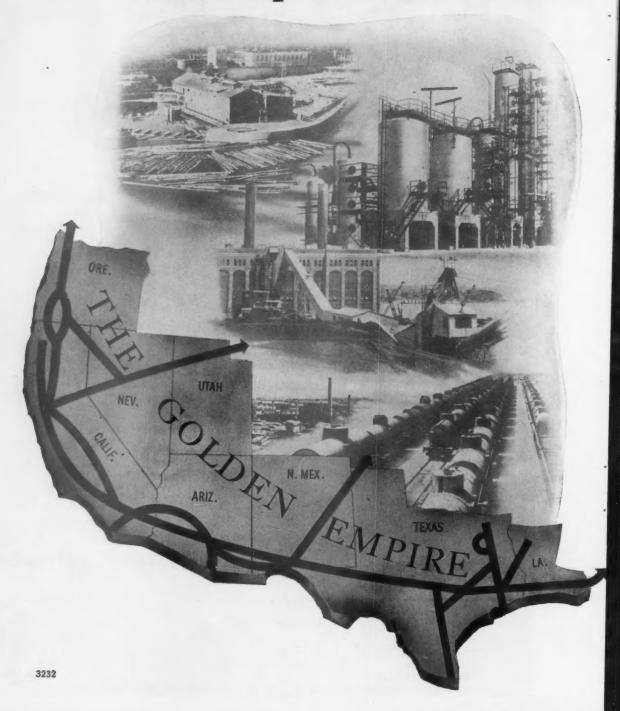
Rolled Steel Tires



Rolled Steel Wheels



"to provide progressive, friendly service to our



customers...



...to further development of the area served by our lines..."

These are the principles on which the friendly Southern Pacific

Railroad was built...the principles that will guide it to even greater

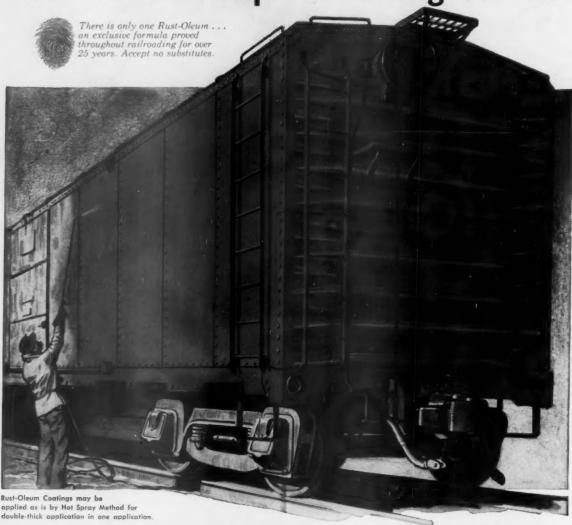
usefulness as the Golden Empire grows into its full stature.

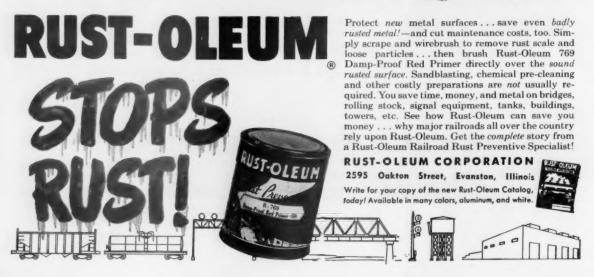
Today, operating more miles of line than any other American
railroad system, and having assets representing the eighth largest
corporation in the entire nation (not including banks and
insurance companies), the Southern Pacific may well look back
on its past with pride, and to the future with confidence.

As one pioneer to an even earlier one, it is a distinct pleasure to congratulate our neighbors and friends of the Southern Pacific on their first century of service and progress, and to wish them an even more illustrious future in the years ahead.

THE COLORADO FUEL AND IRON CORPORATION
DENVER, COLORADO

RUST-OLEUM keeps 'em looking like this!





Avis presents the nation with a completely new idea in rail-auto travel

(This advertisement will appear in The Saturday Evening Post, Time, U. S. News & World Report and Business Week.)

Another Avis First:

"Rent it here - Leave it there" service

Now you can rent a new car from Avis in any city, leave it at any other Avis office in the nation! Here's one of the greatest improvements in travel in years—the Avis "Rent it here—leave it there" service. For the first time you can rent a new Plymouth or other fine car from more than 375 Avis offices in the U. S. and return it to any other Avis office in the nation. No longer do you have to double back and return your car to its origin. This exclusive one-way service makes it more convenient than ever to travel in a sparkling new car from Avis for business or pleasure.



FOR BUSINESS—Sales Manager Bill Smith in Philadelphia plans a three-day selling trip before attending an important sales meeting in St. Louis. By driving he knows that he'll make more calls—but there isn't time to drive both ways. So he rents a clean, new car from Avis in Philadelphia and gets train reservations

from Pittsburgh to St. Louis. As he drives to Pittsburgh he sees customers in Reading, Lancaster, Harrisburg, Altoona and Johnstown. He leaves the car with the Avis office in Pittsburgh and boards the train to St. Louis. Total car cost: \$74.60, including car return charge—and Avis paid for all the gas, oil and insurance.



FOR PLEASURE—in Boston, Don Gray and family plan a trip south—for a vacation and to see their son. By taking a crack train south and arranging for Avis "Rent it here—leave it there" service, they have the convenience of a sparkling new car for sight-seeing. The car is waiting for them at the station in Daytona Beach, where

they spend a week. Then they head for Pensacola, where their son is stationed, enjoying a 2-day scenic drive across Florida. After a happy reunion, the Grays drive to Mobile, where they leave the car at the Avis office, paying only \$136.58, including car return charge. They take a fast train home, rested and refreshed.



Here's how to arrange for Avis "Rent it here—leave it there" service

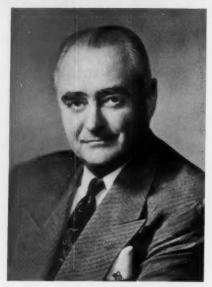
Call your nearest Avis office collect (it's listed under "A" in the phone book). You can rent a new Plymouth or other fine car in minutes. Besides Avis Credit Cards, Avis testing beauty and a second collection.

Avis stations honor many other national credit cards, including those from major railroads and airlines, hotel chains and oil companies. Avis Rent-a-Car System, Inc., Hotel Statler Bldg., Boston, Mass.



R. S. Robie, president of Avis and originator of the first workable rail-auto plan, explains the benefits of this new service to railroads, on the next page.

"Together we can make traveling even more of a pleasure"



R. S. Robie, President of Avis, inaugurated the nation's first workable rail-auto plan twenty years ago. It was an immediate and continuing success. Now he carries this plan one step farther.

"The long and short of quick, comfortable traveling is the railroad and the rented car — the railroad for the long haul, the car for the short haul.

"It's a natural combination. In 1935, I worked with the New Haven Railroad on the first such continuous plan. It was an immediate success. And it still is an effective business passenger promotion.

"Now, we at Avis intend to give even better service to the traveling public. We call the plan 'Rent it here — leave it there' service. No more doubling back with a rented car. Now, travelers simply drive to the city with the most convenient rail connections and leave their cars. This is something new — never before offered on a national scale.

"We expect an enthusiastic response to the plan

from the American public. And we are making certain that the public is fully informed with advertisements in Life, The Saturday Evening Post, Holiday, Time, Newsweek, U.S. News & World Report and Business Week. One is reprinted on the preceding page.

"The public is looking to us for new ways of avoiding long, wearisome automobile trips on overcrowded, nerve-jarring highways. With the co-operation of the railroads of America in our plan, we at Avis are sure we can give the public what it wants. I would like to hear comments of railroad management on the new plan.

"Together we can make traveling even more of a pleasure."

R. S. ROBIE, President AVIS Rent-a-Car System, Inc.

Mr. R. S. Robie Avis Rent-a-Car System, Inc. Hotel Statler Building Boston, Mass.

Dear Mr. Robie:

Congratulations on your improvement of the rail-auto plan, with which we have been co-operating for more than 20 years. I am sure it will make our present service even more flexible and attractive to travelers.

Once again everybody will gain—the railroads, Avis, and, most important, the American traveling public. Please count on continuing co-operation from the New Haven.

E WILLIAMS Coneral Passenger Traffic A

C. E. WILLIAMS, General Passenger Traffic Manager
New York, New Haven and Hartford Railroad



LOW CONDUCTIVITY... Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — 25 bits per square foot, per hour, per degree

F., per inch mick.

LIGHT WEIGHT . . . Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%-reduce weight of STREAMLITE HAIRINSUL by 40%-reduce weight of STREAMLITE management when wet,

PERMANENT . . . Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

resistant and odorless.

EASY TO INSTALL . . . Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall applicables between fasteners.

sections between fasteners.

COMPLETE RANGE... STREAMLITE HAIRINSUL is available 1/2" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings available.

weights and facings available.

HIGH SALVAGE VALUE . . . The all-hair content
does not deteriorate with age; therefore has high
a comparable saving.

... because time has yet to destroy or impair the high insulating efficiency of Streamlite HAIRINSUL

Even after twenty or more years of service, STREAMLITE HAIRINSUL has been removed from refrigerator cars and re-used in new cars without need for further processing or renovating.

STREAMLITE HAIRINSUL, the all-hair insulation that actually weighs 40% less and gives so much more in efficiency and economy is a one-time investment.

At left are still more reasons why leading car builders demand STREAMLITE HAIRINSUL for efficient insulations. Write for complete data.

Streamlite AMERICAN HAIR & FELT CO.

SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED



harnesses diesels with OKONITE-OKOPRENE

Mounting Okonite-Okoprene diesel wire in this wire harness subassembly saves labor for the Atlantic Coast Line. It eliminates the need for pulling individual wires through the diesel engine conduit system.

type DEL wiring

The Atlantic Coast Line Railroad, in keeping with its modernization program, selected a service-proved cable—Okonite-Okoprene type DEL—to harness its diesel locomotives. Service experience has proved that heat, moisture, mechanical abuse and oil—the main causes of damage to diesel circuits—have little or no effect on this cable's composite wall insulation and sheath.

Heat-resistant Okonite insulation, compounded with natural Up-River Fine Para rubber, provides time-tested mechanical toughness and electrical strength. The Okoprene sheath, a neoprene compound made to Okonite's own formula, is highly resistant to diesel lubricants and mechanical wear. Firmly bonded together by vulcanization in a metal mold, Okonite-Okoprene is the longest-lived diesel electric locomotive wire.

In addition to diesel wiring,
Okonite-Okoprene is used on over 100
other Class 1 railroads for yard wiring,
signal circuits and car wire. For
complete information on Okonite
railroad wires and cables, write for
Bulletin RA1078 to The Okonite
Company, Passaic, New Jersey.



"Union Shop"—a Remedy or a Malady?

The railroad industry is the center of a historic contest for human freedom-that is, the right of an individual to a job whether or not he chooses to become a member of a labor union. The reference, of course, is to the comprehensive defense of the "right to work" principle which the Santa

Fe is carrying on in the courts.

Some railroad unionists-but by no means all of them-consider this effort of the Santa Fe's as "anti-labor" or, at least, "anti-union." In this paper's opinion this view, however honestly held, is certainly shortsighted and probably mistaken. At the recent meeting of the American Bar Association in Philadelphia Britain's Lord Justice of Appeal Denning delivered an address on "The Price of Freedom." In it he quoted Charles Geddes, until recently chairman of Britain's Trade Union Congress, as follows:

"I do not believe the trade union movement of Great Britain can live for very much longer on the basis of compulsion. Must people belong to us or starve, whether they like our policies or not? Is that to be the future of the movement? No. I believe the trade union card is an honor to be conferred, not a badge which signifies that you have got to do something whether you like it or not. We want the right to exclude people from our union if necessary and we cannot do that on a basis of 'Belong

Justice Denning went on to discuss "freedom of association"-which he characterized as "one of the most prized freedoms of the twentieth century." He said in part:

"If men are ever to be able to break the bonds of oppression or servitude, they must be free to meet and discuss their grievances and to work out in unison a plan of action to set things right. . . . So also men must be able to form themselves into trade unions to protect their working conditions. . . . There is much that is good in all this freedom: but at the same time it has its drawbacks.

"Many cases have occurred of late where this freedom for the group has operated harshly against the individual. Trade unions are perhaps the best instance. It is reasonable enough that the workmen in a particular industry should wish all their fellow-workmen to be members of their own trade union, because that gives them greater bargaining power: but this leads to the 'closed shop' as it is called, where a man has no right to work unless he is a member of a particular trade union.

"It is reasonable enough too that a trade union should have means of securing discipline among its members: but this leads to private tribunals where a man can be punished without any recourse to the courts of law. . . . When a man joins a trade union, he is bound by the rules. The rules are said to be a contract between the men themselves and between them and the union. But they are in no sense a contract freely negotiated. A man must accept them or go without employment. They are nothing more nor less than a legislative code laid down by some members of the union to be imposed on all members of the

"Where the law falls short is that it puts too much emphasis on the supposed contract between a man and his union and too little emphasis on his right to work. A man's right to work is just as important to him, indeed more important, than his rights of property. If his rights of property are invaded, the courts have well known causes of action to protect him. His house, his furniture, and his investments are all well safeguarded by the law. But his right to work is left open to marauders. . .

At the same meeting of the Bar Association, Jonathan C. Gibson, the Santa Fe's vice-president and general counsel, spoke on the so-called "right to work" laws in this country-which a number of states have enacted to forestall the "closed" or "union" shop. Among other things, Mr. Gibson

"Some working men and women want to join a union. Others do not. In either event their choice should be respected whether the reasons are good or bad or indifferent. A union, after all, is seldom merely a collective bargaining representative. It is always partly that, but it is often also partly a political organization, partly a fraternal order, partly a social club, and partly an insurance concern. Even more often it aspires to be a state within a state and to exercise a high degree of discipline and control over its members.

"All of these things may not be objectionable where membership is on a voluntary basis, but it violates fundamental American principles to force a man into a private organization against his will. It is bad enough to force him into a good union. But what about forcing him into some of the minority of unions we have in this country run by communists or dominated by racketeers? Monstrous as this may seem, it is being done today in the United States of America and done in the name of demo-

cratic principles.

This "union shop" question is not one where opinion ought to divide, merely depending upon whether an individual is a unionist or not. Actually the question at issue is the long-run health of the union movement itself-and whether it can hope to continue to be a genuine defender of members' welfare, once it gets the power to force employees to join and pay dues, whether the union serves its members well or ill.

The observation that "all power corrupts, and absolute power corrupts absolutely" has lost none of its truth. If union leaders are to be relieved of the discipline exercised over their actions by the members' right to resign and quit paying duesthen what discipline over their behavior is going to be substituted? It has been customary in America for industry monopolies to be strictly regulated by government. Can the unions keep on adding indefinitely to their monopoly powers, and still avoid the regulation that experience has shown is necessary to prevent the abuse of monopoly power?



(All aerial photos by Fairchild Aerial Surveys, Inc.)

LACKAWANNA'S four-span deck-plate-girder bridge across Brodhead creek near Stroudsburg, Pa., was reduced to ruins by rampaging waters. Wrecked spans were lodged against piers of highway bridge which also went out.

Floods Stagger Eastern Lines

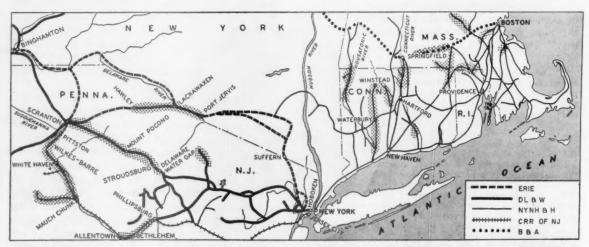
Many months, and in some cases years, will be required for roads to recover completely from their "worst disaster in history"

By R. F. LINDSAY
Associate Editor

August 18-19, 1955, are dates never to be forgotten by railroad men in the East.

Striking with unparalleled fury flash floods in a five-

state area—covering southern Massachusetts, most of Connecticut, southeastern New York, eastern Pennsylvania, and northern New Jersey—seriously crippled the operations of three major railroads for weeks and disabled half a dozen others for periods of several days (Railway Age, August 29, page 7). In a few hours scores



MAJOR AREAS of damage on the five roads hardest hit by rampaging flood waters are shaded on this map.

Other roads in the area also suffered widespread damage, though not as severe or crippling in nature.

"DYING" DIANE DID IT

Add 10 to 14 in. of rainfall in less than 24 hours to soil already saturated in mountainous regions where runoff is extremely rapid and you have the ingredients for the worst flood ever to hit parts of five northeastern states.

Hurricane Diane had "blown itself out," according to weather experts, and was no longer considered very dangerous. But what had not been reckoned with were the tons of moisture-ladened air which the dying tropical storm had gathered into its fold while loitering "innocently" off the Eastern seaboard. When Diane finally began to move, its winds carried this saturated air inland to the mountainous regions where the heavy load of water was literally dumped in the span of a few short hours.

One resident of upper Pennsylvania told this reporter that he measured over 10 in. of water in an old tub in his back yard in just a little over six hours. Others report upwards of 14 in. in less than 24 hours.

The mountain streams, which are naturally swiftmoving because of their steep gradients, but normally clear and peaceful, were transformed into surging "tidal waves." According to numerous eyewitness reports Brodhead creek at Stroudsburg rose 30 ft in 15 minutes. People were forced to run for their lives. Any who stayed or who went back to gather up belongings risked almost certain death.

Another factor adding to the danger was the failure of many dams along the upper reaches of the streams. Many of these dams burst wide open, letting loose thousands of tons of watery death and destruction to augment the swollen creeks.

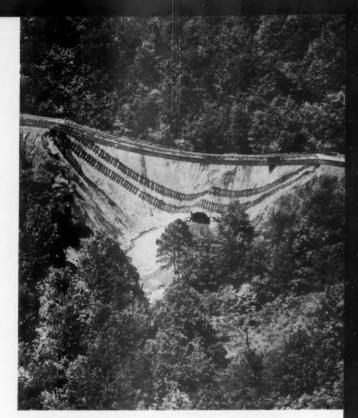
Most of the destruction occurred along the tributaries of the Delaware and Susquehanna rivers in New York, New Jersey and Pennsylvania, and along the Connecticut and Housatonic rivers and tributaries in Massachusetts and Connecticut. In a rush to dump their loads of water into the main river channels and into the sea, the streams wiped out everything in their paths. When a culvert or bridge did not provide enough opening for the water, it was ripped away or "blown out" and the roadbed carried away to provide an adequate waterway. In many cases streams changed their channels from one side of the railroad tracks to the other, and in some instances converted the roadbed into a streambed.

of steel bridges, large and small, were smashed into heaps of scrap, rail was twisted like barbed wire, and miles of roadbed were completely obliterated in places to depths of 100 ft.

Loss Runs to Multi-Millions

Damage to railroad properties alone was in the millions of dollars and additional millions must be added due to the resulting loss of business and the cost of detouring trains over circuitous routes until the lines could be put back in service.

Hardest hit were the New Haven, with a total of 35 bridges disabled, many completely destroyed, 68 washouts and 12 landslides; the Delaware, Lackawanna & Western, with over 50 miles of its main line between East Stroudsburg, Pa., and Scranton cut by nearly 100



GAPING HOLE, 300 ft long and 100 ft deep, was left in Lackawanna's main line near Cresco, Pa. Here an alert engineer on passenger train averted a tragedy. Unbroken track signal circuit gave "green" approach, but engineer proceeded with caution and was able to stop.



ONE OF 35 New Haven bridges wrecked in Connecticut and Massachusetts. Note how heavy concrete abutments and wingwalls were knocked down by swirling waters.

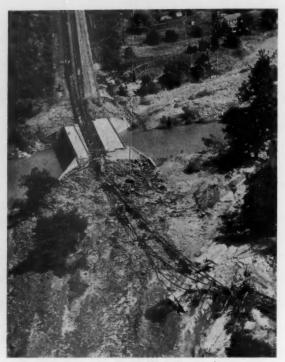
washouts, slides and the complete loss of a double-track, four-span, through-girder bridge at East Stroudsburg; the New York Central, with its Boston & Albany line hard



"EXPLOSION" of a 100-year old 15-ft stone-arch culvert on Eric's main line left this 148 ft long, 55 ft deep "crater."

hit between Springfield, Mass., and Worcester; and the Erie, with four major washouts, including three large stone-arch culverts destroyed, and one deck-plate-girder bridge badly damaged on its main line between Port Jervis, N. Y., and Lackawaxen, Pa. The Erie also suffered heavy damage on its branch line from Lackawaxen into Scranton, and its car shop and yards at Dunmore, Pa., were reduced to a mass of rubble.

The force of the rampaging flood waters was almost beyond imagination. The term washout is certainly not adequately descriptive of the gaping holes left in the



TWISTED RAILS and damaged concrete bridge were left in flood's wake on Lackawanna near Analomink, Pa., where Brodhead creek rose 30 ft in a few minutes.

wake of the receding waters. Following a flood we normally think of tracks being washed out from 5 to 10 or maybe even 15 ft deep, with rails and ties still intact and resting like a roller coaster on the damaged roadbed. There were, of course, many stretches of track washed out in this "conventional" manner—but these were considered only minor conditions as compared to scores of others.

A few examples of what have been termed "major washouts" are as follows (stated here in the same succinct language used by the railroad men who reported them

HOW TRAFFIC WAS DETOURED

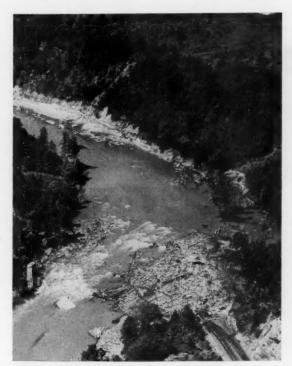
It takes a catastrophe like the devastating floods in the East to show the value of the country's extensive railroad network—including lines of light earning capacity. Little-used branch lines with maybe only one train a day are turned into "first-class main lines" within a few hours, carrying 50 trains per day. Such was the case for several days and, in some instances, for weeks on several eastern roads.

Hardest hit as far as the movement of main-line traffic was concerned were the Lackawanna, with its main line between Scranton and Stroudsburg out of service for 29 days; the Boston & Albany, with its main line between Springfield and Worcester out for 26 days; the Erie with its main line between Port Jervis and Lackawaxen closed for 22 days; and the Jersey Central with its main line between Taylor, Pa., and Scranton closed for eight days. The New Haven's main line from New Haven, Conn., to Springfield, Mass., was reopened after three days.

The most serious New Haven damage was suffered on many secondary but important lines.

Jersey Central traffic was detoured over the Lehigh Valley between August 20 and August 27, when the CNJ main line was reopened. The two lines parallel each other practically all the way through the flood area and the Lehigh Valley was not damaged too seriously by the flood waters.

Lackawanna traffic was detoured over several different routes. These include: The Pennsylvania from Elmira, N.Y., via Harrisburg and Philadelphia, thence to the DL&W connection at Jersey City; Scranton to Pittston Jct. on DL&W branch line, thence Lehigh Valley to Phillipsburg, Pa., and DL&W branch line to a connection with the main line at Lake Hopateong, N.J.; Delaware & Hudson from Binghamton, N.Y., to Scheneetady, then New York Central (West Shore) to Weehawken, N.J.; DL&W branch to Utica, N.Y., thence NYC as above. Coal trains east of Scranton moved via the Pennsylvania and Reading to the New York waterfront. After the Jersey Central line between Scranton and



NEARLY A MILE of roadbed was completely obliterated at this point on Lackawanna near Stroudsburg, Pa. Tracks originally followed stream around bend on right.

to headquarters): All tracks washed out for a distance of 800 ft, 60 ft deep, and a large stone-arch culvert destroyed; all tracks washed out for 1,600 ft, 25 ft deep; all tracks washed out for 130 ft, 80 ft deep; all tracks washed out for 300 ft, 100 ft deep, and a 17-ft stone arch culvert destroyed; all tracks washed out 350 ft, 65 ft deep, and a 20-ft stone arch culvert destroyed. Such a list could go on and on giving many other locations.

In many places there was no evidence of a railroad track ever having been there. Rails and ties were completely "gone" and what had once been a roadbed was



"CORKSCREW" TRACK like this on the New Haven near Grosvenordale, Conn., was "minor" trouble compared to much of the road's damage.

either level ground or filled with huge rocks and debris deposited by the rampaging waters. Where rails were visible, they had in many cases been twisted and bent into weird shapes. In most cases ties had been ripped off by the surging waters and were nowhere to be seen.

Bridge abutments, piers and concrete and steel spans were tossed around like so many toy blocks, and culverts were literally "blown up" by the force of the waters. Sides of steel and masonry buildings, and in some cases the entire structures, were ripped and smashed in a fashion reminiscent of World War II.

Phillipsburg was reopened August 27, a great deal of Lackawanna traffic was detoured over this line.

Erie traffic east of Binghamton, N.Y., was detoured over several routes, as follows: The Pennsylvania from Elmira to a junction with the Erie outside Jersey City; Delaware & Hudson from Binghamton to Schenectady, thence NYC to Weehawken; D&H from Binghamton to Sidney, N.Y., thence New York, Ontario & Western to a junction with an Erie branch at Campbell Hall, N.Y.; Lehigh Valley from Waverly, N.Y., to Easton, Pa., thence Lehigh & Hudson River to Greycourt, N.Y.; NYC from Corning, N.Y., to Newberry Junction, thence Reading, CNJ and L&HR to Greycourt and Campbell Hall; Lehigh Valley from Waverly to Newark, thence PRR to Jersey City; and Lehigh Valley from Waverly to Easton, Pa., thence L&HR to Greycourt. The New York Central used the Boston & Maine between Boston and Troy, N. Y., for through passenger trains, while through freights were routed over the B&M between Worcester and Rotterdam Jet., N.Y.

As a side effect the roads affected suffered con-

siderably from a shortage of motive power, due to the time required to move trains over the circuitous detour routes. Aggravating the power shortage on the Lackawanna was the loss of 17 diesel units marooned in the flood territory between Scranton and Stroudsburg. The Lackawanna rented 15 road-switcher units from the Army, the Erie six, the New Haven 20 and the NYC 20. It was necessary to place two train and engine crews on many trains because detours required trains to be on line over 16 hours, due in part to the congestion on the open routes. In most cases the roads curtailed passenger traffic sharply and concentrated on detouring freights over other lines.

Roads which were not affected seriously by the floods cooperated to the fullest extent with their hard-hit neighbors to move their traffic just as rapidly as possible. A. E. Kriesien, general manager of the Erie's Eastern district, said: "You just could not ask for any better cooperation—that goes from the very top to the bottom. They're even apologetic when they can't do more to help us out."

DOWN, BUT NOT OUT ...

... They Come Back Fighting

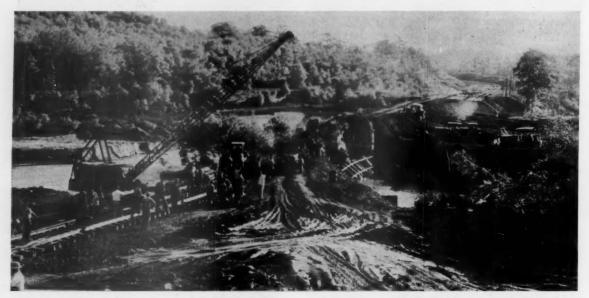
Bouncing back from one of the worst railroad disasters in history, the Eastern roads moved thousands of men, hundreds of thousands of tons of material, and a vast array of mechanized equipment into their flood-damaged areas to restore the many crippled lines as rapidly as possible.

Crews worked round-the-clock at man-killing pace, with only one goal in sight—"get a track through."

One railroad officer remarked that "the cooperation of our employees from top to bottom is one of the

finest displays of loyal service I have ever seen. We have not heard one complaint from anyone about anything."

The aggressive spirit, ingenuity and dogged determination shown by all of the roads in pushing the task of reconstruction is exemplified by the Lackawanna and the Erie, and their procedures are outlined in these pages. Other roads whose lines were out of service for weeks are making equally remarkable comebacks.



VIRTUAL ARMY of men and machines attacks 800-ft washout on Lackawanna near Scranton. Seven contractors with vast array of earthmoving machines and dump

trucks worked at this one location alone. Railroad crews built temporary single track across new roadbed as machines excavated entire hillsides for fill material.

DL&W Goes All Out

With over 50 miles of its multiple-track main line knocked out, the Lackawanna was faced with a gigantic reconstruction problem. Many of the washed-out spots in the 50-mile territory were inaccessible by either road or rail.

Moreover, the washout territory was cut off at both ends by every heavily damaged sections of track within two miles of each end of the 50-mile stretch.

At the east end a four-span through-girder bridge across Brodhead creek was completely demolished, eliminating the possibility of entering the washout territory by rail until a bridge had been erected over the stream. At the west end 800 ft of tracks were washed out completely to a depth of 60 ft and one-third of a stone-arch culvert and its northerly wingwall were demolished, making it impossible to enter the west end of the territory until this gaping hole could be spanned.

The only solution to the difficult situation, as Lackawanna officers saw it, was to flank the 50-mile stretch and come into the railroad from the sides with enough men, materials and equipment to attack the individual washouts simultaneously. In this manner the track could be cribbed up where possible, culverts installed and the subgrade and track rebuilt so that work trains could come in from both ends. Ballast and additional fill material could then be unloaded quickly at each of the washout locations without waiting for tracks to be built across the breaks.

The road hired 15 outside contractors with several hundred pieces of equipment, including earthmoving machines, cranes, pile drivers and dump trucks, to carry out the initial problem of restoring the subgrade and bridge structures. Where there were no roads to reach the tracks, contractors built them as they moved in. Several hundred additional men were hired from local areas to help out with the tremendous task of rebuilding line, unloading ballast and surfacing track.

Rebuilding on the Lackawanna...



DARKNESS meant only that another shift of men took over the round-the-clock reconstruction work.



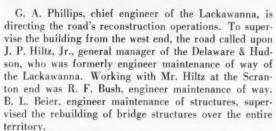
TEMPORARY bridge to replace demolished four-span girder structure across Brodhead creek required frame bents since solid rock bed precluded use of piling. Special 25-ft and 33-ft steel girder spans were fabricated for temporary structure by American Bridge Company on a "rush" order.



SHEET PILING was used to form sides for new culvert at 100-ft hole. After sheets had been driven on each side I-beams were put across opening.



DYNAMITE was used to clear wrecked spans and debris from stream channel in order to make way for temporary bridge. Earthmoving machinery and off-track equipment was used extensively.



Track supervisors from Buffalo, Elmira, Syracuse and Binghamton were moved into the washout area to assist



DIRECTING Lackawanna reconstruction operations from the west end were J. P. Hiltz, Jr., general manager of the D&H (center), and R. F. Bush (behind Mr. Hiltz) engineer maintenance of way of the Lackawanna.

the supervisors at Scranton and Stroudsburg with direct supervision over the many rebuilding jobs. Supervisory personnel was given wide authority to hire men and equipment and purchase materials as necessary.

The work was carried out with two 12-hour shifts for both supervisors and the men. Portable generating plants and flood-lighting equipment were moved in from all over the railroad, and other units were rented or bought to provide lighting for night operations along the flooddamaged territory.

Material for fills was obtained from about every conceivable source. Endless streams of dump trucks transported mine rock (a waste material from strip mining operations, consisting primarily of a mixture of rock, coal and dirt) from the Scranton area to the various washout locations. Rock bluffs were blasted off and entire hillsides excavated to obtain material to reconstruct the roadbed. In addition, shovels, clamshells and draglines were put to work dredging out stream beds, and

depositing the material for roadbed.

As the subgrade was restored enough to accommodate one track, several gangs, called the "pioneers," set about to build a track over the new fills. Track supervisors were placed in charge of this track-rebuilding work. Materials for building one track across at the washed-out points and ties for cribbing were obtained from adjacent main-line tracks on both sides of the washouts. These tracks were ripped up and the material collected at the washed-out points before rebuilding of the subgrade was completed. In this manner, a new track could be built across as soon as the subgrade had been restored to a point where it would support one track.

Immediately behind the track rebuilding gangs, ballast was unloaded on a 24-hour basis by work trains. One group of track supervisors were responsible for this work during the day, another during the night. While not unloading ballast, these gangs used power jacks to raise the track to grade and DL&W track liners for lining.

Other work trains were used to shuttle air-dump cars and ballast cars back and forth from yards to the work trains unloading the material. Temporary switches were installed at intervals to connect the through track with one of the adjacent disabled main tracks to provide storage space and switching connections for the shuttle trains and the work trains engaged in unloading work.

To make up for the thousands of feet of rail which was either lost or badly damaged, the Lackawanna ordered 3,000 tons of emergency rail from the Bethlehem Steel Company to be delivered to the Buffalo division. The new rail will be laid there, and the released rail used to repair the second and third main tracks in the washout territory. Officers report that Bethlehem set everything else aside to roll the needed rail.

Because of the unstable nature of much of the material being used for fill, the Lackawanna plans to carry out a large-scale rip-rapping program beginning immediately. Officers estimate that around 20,000 cars of rock will be used for rip-rap along the new fills. The project is expected to take about two years.

Erie Bridges Its Gaps

Unlike the Lackawanna, which had damage spread over a wide territory, the Erie's heavy main-line damage was confined to four very serious breaks between Parkers Glen, Pa., and Mast Hope, a distance of about 13 miles.

At the latter location a deck-plate-girder bridge was washed off its piers and the east abutment destroyed. The eastbound span of the double-track structure was damaged beyond repair; however, the westbound span was in satisfactory condition to be used temporarily. A temporary abutment in the form of a timber pile cluster was driven at the east end and this span jacked up onto it.

At the same time bulldozers were used to push in material for restoring a 240 ft long, 25 ft high fill at the east end of the bridge, the track being raised on the material as the machines pushed it in from the surrounding area. This particular spot was reopened with one track after three and one-half days, allowing work trains to proceed to the next major washout 1½ miles west of Shohola, Pa.

At this location and at the other two major points of damage, reconstruction was complicated by the fact that large stone-arch culverts had been destroyed almost entirely by the terrific water pressure. The holes left at these points were 350 ft long and 65 ft deep, 110 ft long and 80 ft deep, and 148 ft long and 55 ft deep, respectively.

The Erie decided that the quickest and most satisfactory way to span these holes was by bridging, using timber-pile bents where possible and 14-in. steel H-piles elsewhere with deck-plate-girder and I-beam spans. Officers felt that with this type of temporary construction, the benefits would be three-fold, i.e., a temporary track would be provided across the gap, plenty of waterway would be provided for the streams and design and con-

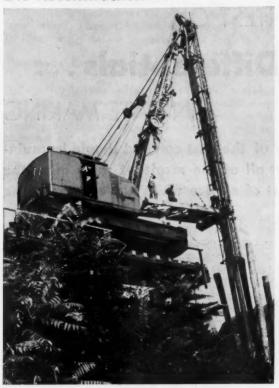


ERIE'S enormous hole at Parkers Glen, Pa., was spanned by temporary steel bridge. Here special pile hammer, operated without leads, drives 14-in. H-pile for bent to support one end of center deck-plate-girder span.

struction of permanent structures could be carried out later without interference to or from the temporary structures.

To carry out this heavy bridge-building program, the read brought in its steel-erection crane, equipped with a special pile hammer for driving steel H-piles without

Erie Reconstruction ...



DIESEL CRANE and Syntron diesel pile hammer, borrowed from PRR, worked in from other end of Erie's washout territory, driving piling for temporary bridge.

leads, and two auxiliary locomotive cranes to handle materials. In addition it borrowed a diesel locomotive crane and a Syntron self-contained diesel pile hammer from the Pennsylvania. A PRR crew came with the pile-driving rig, and a representative of the Syntron Company was on the job throughout the rebuilding operation.

The Erie pile-driving rig worked in from the east end, while the Pennsylvania outfit bridged across from the west. The two met at the middle washout to open the temporary single-track line.

The road called in division engineers, master carpenters and other personnel from all over its system to assist with the reconstruction work. Headquarters at the east end were established at Port Jervis, where two Pullman cars and a diner were brought in to house and feed and provide offices for supervisory personnel. L. H. Jentoft, engineer maintenance of way, Eastern district, was in charge of the east-end operations. At the west end, J. S. Parsons, assistant chief engineer, maintenance, and H. J. Weccheider, engineer maintenance of way, Western district, were headquartered in a business car at Narrowsburg, Pa., along with other supervisory officers. C. A. Roberts, engineer of structures, directed erection of steel over the entire territory.

As on the Lackawanna, the Erie worked two 12-hour shifts, with two shifts of supervision also. In addition to pushing the work on to completion, the day shift handled the transportation and preparation of all materials; the night shift was then left to carry on the actual rebuilding work.



THIS YAWNING CHASM, measuring 55 ft deep, was located on the Erie's line just west of Shohola, Pa. Workmen used timber pile trestle to bridge the gap.



ERIE OFFICERS discuss rebuilding plans near Mast Hope, Pa., with contractors' representatives. Left to right: F. N. Snyder, supervisor work equipment and welding; Art Price, division engineer; L. H. Jentoft, engineer M/W, Eastern district; H. J. Weccheider, engineer M/W Western district; J. S. Parsons, assistant chief engineer maintenance of way; and contractor's men.

Fortunately, practically all the material necessary for the bridge-building work was on hand, thus saving a great deal of time in rushing the job to completion.

FIRST PRIZE WINNER IN RAILWAY AGE ESSAY CONTEST ON

Traditional Differentials ...

IN RATE MAKING

The traditional differentials of the past can and should be maintained only to the extent that all of the resultant rates meet the twin tests of covering the cost of service while not exceeding the ceiling set by competition

By ALAN M. WHITE

Member, Railroads' Tariff Research Group

The dominant characteristic of the railroad rate structure is the great emphasis placed upon relationships between both places and commodities.

The Interstate Commerce Act, since 1887, has required that rates be reasonable and fair and that no shipper or locality be given preferential treatment. In the cases brought before the commission's bar, the most minute attention was paid to fixing proper differentials and relationships, and in 1925 the commission was specifically directed by Congress, through the Hoch-Smith Resolution, to investigate and review the entire rate structure and make such redistribution of rates and charges as might be found necessary to remove burdens or undue advantage between the various localities and parts of the country and the various classes and kinds of commodities with due regard to market values and an existing depression in agriculture.

ICC Has the Final Word

The power of the commission in these matters is virtually absolute, the Supreme Court in recent months having upheld an order of the commission prescribing rates on vegetables from the Southwest that were proved to be below the railroads' out-of-pocket cost of operation.

The development of intercity motor truck transportation has destroyed many of the laboriously constructed relationships, and a changing and expanding national economy has rendered others obsolete or ineffectual.

Where the lower charges of the trucks have resulted in appreciable diversions of traffic from the rails, the latter have in many cases attempted to meet the competitive rates with or without restoring former relationships as to localities. For the most part such situations have been treated independently of the rate structure as a whole and decisions have been based upon the individual circumstances of the moment. Where rates have been cut to meet truck competition a conscious effort has been made to resist reestablishing former relationships between the levels of the rates on different commodities. Thus there are instances of higher rates on raw materials than on the manufactured products produced therefrom and bulk commodities in tank cars may take higher rates than when the same product is shipped in more valuable consumer packages.

In selecting a transportation service a shipper is influenced by the total cost of that service, of which the line-haul rate may be only a portion. Other factors—such as comparative time in transit, expense of packaging, loading, unloading, drayage, and claims—all enter into the picture. Therefore, rates and charges as used in this analysis are intended to convey the idea of the complete unit cost of transportation rather than a published station-to-station rate. A shipper will pay a premium for quick transportation only if he secures offsetting savings in other directions.

There is little indication that the existing rail rate structure with so many of the historic differentials upset is impeding the free interchange of commodities or adversely affecting the growth and prosperity of the business community.

It is, however, painfully evident that the rate structure is failing miserably to provide the traffic volume and revenue necessary for the financial health of the railroads. Estimates of the commission's Bureau of Transport Economics and Statistics disclose that the railroads' share of intercity ton-miles of transportation has dropped from 64.4 per cent of the total to but 51.7 per cent in the period from 1939 to 1953 while the motor truck increased its share from 9.2 to 17.4 per cent. Meanwhile the railroads' rate of return on property investment in 1954 fell to a slim 3.28 per cent.

In a world of economic ferment, where what used to be a century of progress now takes place in a decade, businesses must adapt quickly or wither. For the railroad industry to prosper, modifications must be made in the traditional "what the traffic will bear"

Mr. White's paper is slightly abridged for publication in these pages. It is planned to reprint as a pamphlet available from Railway Age the two prize-winning essays in this contest, and several of the other papers considered as of outstanding value by the judges. Single copies of this pamphlet will be priced at \$1, with greatly reduced prices for larger quantities.

theory of rate making that will accord proper recognition to both the short-run and long-term implications of a highly competitive market for transportation. An upto-date overall policy of rate making with flexibility supplanting the old rigidity is sorely needed.

Traditional Rate Philosophy

As virtually the sole provider of intercity transportation for many years, the railroads were obliged to observe what the economists term "monopoly" pricing. If traffic was to move it had no alternative but to pay the rate determined by the judgment of railroad rate officials or prescribed by regulatory authority.

In an effort to develop the maximum return from the traffic potential, rates tended to be set relatively high on manufactured articles possessing a high ratio of value to weight, the profit from which could be applied to support low rates on commodities of lesser value or with light loading characteristics. To encourage longer hauls, the measure of the rate per mile tended to decrease as the distance grew; and fixed differentials or geographical relationships not based entirely upon distance were created to enlarge the marketing areas of individual producers. Regulation was imposed, not to alter this basic philosophy but to curb excesses and correct defects in its application.

A typical example of pre-truck rate making is the scale of rates on iron and steel articles in Eastern territory prescribed by the commission in 1929 following an extensive investigation pursuant to the Hoch-Smith Resolution previously mentioned. This rate adjustment for many years moved the bulk of the iron and steel traffic in the East where 90 per cent of the mill capacity is located. This traffic in 1947 exceeded 32 million tons originated, with revenue to the railroads in the Eastern district of \$173 million.

In its report in this case the commission observed that if agricultural products were to receive the benefit of the lowest possible lawful rates, commodities such as iron and steel articles, which were able to bear relatively high rates, must be accorded rates which approach but which do not exceed reasonable maxima. Moreover, the level of the rates was stated to be of much less importance to shippers generally than was their relationship.

The Dominant Distance Factor

As a principal criterion for determining relationships particular attention has been given by the commission to distances. Most of its general investigations have resulted in prescription of rate scales to be applied to mileages figured over the shortest rail routes through junctions at which traffic could be interchanged without transfer of lading. Costs have been permitted to exercise a significant influence only as to the general level of the entire rate structure; partly because they were extremely variable and difficult to assign to individual movements, but particularly because the structure as a whole was depended upon to provide the overall return needed.

Theory and practice, though, are two different things. With the right to route their traffic guaranteed by law, large shippers were in position to effectively forestall upward revisions in the rates on any commodity that the carriers might consider was paying less than the traffic

could stand. The power to divert millions of dollars of business from one railroad to another was a stick so big that shippers were seldom constrained even to speak softly to discourage rate-raising attempts.

This condition confined the rate-making officials almost exclusively to the role of granters of reductions and, as the appointed defenders of the revenue, they were forced to erect a Maginot Line type of resistance against assaults on the rate structure. Under the system described, the modus operandi practiced by the rate official was conditioned on the knowledge that an unwarranted reduction in a single rate would set off a chain of sympathetic adjustments until the disturbed relationships were reeffected.

Rate adjustments came to be handled much like lawsuits. Painstaking searching and evaluation of precedents was required and such rigidity entered the rate structure that an outmoded basis of rates could seldom be revised without exhaustive litigation before the regulatory tribunals. When the general level sank too low under the steady erosion to produce an adequate return, the remedy was an application for an overall percentage increase.

There is much evidence that the differentials and relationships, even where commission prescribed, were not the result of scientific appraisal and evaluation of traffic needs and potentialities—else the Hoch-Smith Resolution would hardly have been necessary. They were instead largely the product of inter-railroad competition and evolved from the Topsy-like growth of the rate structure as it was built by the day-to-day negotiation of specific problems.

The commission's report in the Class Rate Investigation, 1939, is so loaded with examples of major commodities which move freely upon such radically different levels in the various rate territories that the conclusion must be drawn that industry possesses great ability in the long run to adapt itself to whatever the existing rate relationships might happen to be and, within wide limits, the needs of business do not dictate the nature of those relationships.

For illustration, prior to the late twenties, interterritorial movements were largely based upon combination rates which were much higher than the single-factor intraterritorial rates for comparable distances. This condition fostered the development of certain types of industry at the territorial border points where they could take advantage of the intraterritorial rate levels in more than one rate territory.

The Impact of Competition

The pioneers of intercity trucking were almost as little concerned with cost as applied to specific movements as were the rail rate makers. They did not need to be too concerned. The intricate pattern of rate relationships with high rates for short hauls and on articles of good stowability afforded virtually unlimited traffic prospects. This fostering rate umbrella extended not only over those areas where the inherent advantage of the truck is clearly apparent but also included many areas where the rail costs are substantially below those of the truck.

Seizing the golden opportunity, the trucks commenced to carve out great chunks of the railroads' most highly profitable traffic, such as liquor, cigarettes and canned goods, by offering whatever rates were needed to attract the movements they desired. Taking a strictly short term view, the railroads tended to ignore these forays until the diversion of a commodity reached such proportions that the revenue on traffic that might be regained by a cut in rates held promise of offsetting the inescapable extension of the reduction to traffic still retained. In many cases spot reductions were then made, the commission having held that rates could be reduced to meet proved truck competition without granting sympathetic reductions to localities not having the same degree of truck competition. It was therefore recognized that the action of the truck and not that of the railroad had destroyed the historic relationships. This practice, nevertheless, was tantamount to inviting a shipper to seek a truck quotation if he wished to have his rail rate reduced.

Where highly competitive articles, e.g. soda products, were involved, reductions to meet competition were sometimes extended to all producers as a result of shipper pressure to have relationships maintained. Such pressure usually results from industry pricing policies when goods are sold on the basis of the seller absorbing the differential in the rail rate and simply pocketing the saving if the traffic moves at a lower truck charge. In fact some shippers have actively opposed reductions in the rail rates where consignees were charged the full rail rate which the shipper retained while delivering the material in his own truck.

The trucks themselves during the thirties were busily creating their own competitive situation. Extensive "grandfather" rights and a liberal policy by the commission of certificating operations under the Motor Carrier Act of 1935—together with exemptions granted by that law to private operations and carriers of agricultural products—assured a high degree of open competition. The for-hire trucks began actively competing among themselves wherever traffic could be secured at a profit. Since their capacity could be readily expanded by merely purchasing more equipment there was pressure to reduce truck rates that were already well below those of the rails.

It was not long before producers of food products, petroleum and the like who were experienced in making their own local deliveries learned the economics of over-the-road trucking and began requiring the independent truckers to meet or better these costs or suffer the alternative of the shipper providing his own transportation. The railroads were accordingly compelled to try to meet rates that were depressed due to bitter struggles among their highway competitors.

Reverting to our example of iron and steel in the East, short term considerations operated to keep the bulk of this movement on the rails long after trucking of many other commodities had become firmly established. In the first place, the huge steel-making plants were geared to carload or trainload service and not equipped to handle great numbers of trucks. Furthermore, the rail rate structure, with its relatively lower rates for longer distances, fitted perfectly into the industry's policy of quoting delivered prices based upon absorption of rail rate differentials. In 1948, however, the steel industry abandoned its traditional pricing policy, following a Supreme Court decision that upset a similar pricing system in the cement industry. The steel makers abruptly dropped

freight absorption and, by quoting mill prices, in effect told their customers to "come and get it."

With steel in short supply at the time, the receivers, finding their costs thus drastically increased, immediately turned to trucks wherever a rate lower than by rail could be secured. The reaction of the railroads was to establish rates on the most competitive of the products designed to meet the truck charges but at twice the normal minimum weight in an effort to maintain satisfactory per car earnings. As the trucks were in position to make further reductions they continued to handle substantial amounts of the traffic and a second general reduction was made by the carriers in an attempt to stem the tide. The final chapter has not yet been written, as the entire adjustment is again a matter of investigation by the commission.

It is significant that the Eastern railroads' originations of iron and steel declined from 32 to 29 million tons per year from 1947 to 1953, in the face of a 30 per cent increase in steel making capacity.

Elements of Competitive Pricing

For generations the railroad rate makers, in the face of all the limitations on their freedom, had been forced to act on the practical premise that there was just so much traffic to move and it was up to them to get the most revenue from it. This precept is still as good as ever when applied to the many commodities that by their nature are ill-suited to motor carrier movement, but it is woefully inappropriate where a competitive element is present.

In the short run the free market price may be above or below the cost of production but in the long run it will approximate the cost plus a reasonable profit of the most efficient producer. The important point is that from the standpoint of the seller the price is fixed for him without his control. His only election in the matter is whether he will or will not do business at the price. That is the Hobson's choice that faces the railroads on the very important part of their traffic that is subject to the competition of other forms of transport.

In the short run it is the price of their competitor the railroads must meet, in the long run his cost of operation. These factors will determine the relationships that can be maintained between places and commodities and industry will have to adapt to them as it has had to other changes in the economic scene.

As indicated, a competitive price is a fluctuating price. Much as the public may desire stability in rates, relaxation of the past rigidity will have to be accepted as a sacrifice in return for the lower rates that competition has brought to a large segment of the rate structure.

A competitive price does not in the long run return a profit that can be used to sustain losses elsewhere. To the extent the railroads engage in competitive pricing they will have to think carefully before extending sympathetic adjustments to other movements where the results would be lower rates than dictated by the competitive situation pertaining to those movements.

The first fundamental of a realistic rate-making policy is to develop an adequate method of computing and allocating cost. This will be difficult, but it should not prove insurmountable. There are very few one-product business enterprises in the country and any

company with a multiplicity of products has the same problem of apportioning overhead and other joint costs. The commission has for several years released statements of fully distributed and out-of-pocket rail costs for various types of equipment and loading and many roads have been at work on the problem.

The importance of a good cost system cannot be overestimated.

With the railroads' most profitable traffic lost or handled at drastically reduced rates something had to give. To date it has been the earnings. Too much of the transportation business is subject to competitive forces to apply the old family remedy of a general increase in rates. Undoubtedly such measures are required to offset currency inflation but the commission's concern in granting the most recent ex parte increases that they would drive traffic off the rails has not proved entirely groundless.

In processing any rate adjustment the traffic man should be armed with his out-of-pocket costs and under no circumstances should a rate be permitted to stand that does not return this figure plus. It is fallacious to think that volume has any magic to offset unit losses.

As to any particular commodity these absolute minimum figures can be projected as a mileage scale in terms of cents per unit of weight. Against these should be set a similar scale of fully distributed costs, and efforts should be made to hold the latter as the minimum for any non-competitive traffic. Where truck competition is present, there should be added a third scale to represent the truck rates and a fourth scale to show truck costs. The latter two will indicate the maximum that can be charged for the short run and long run, respectively.

Where truck costs are below rail costs at the heaviest loading practicable, the railroads should stay out of the business. Where the truck rates and costs are between the rail out-of-pocket and fully distributed costs the rails should meet their competition as they find it. Where the truck costs are above rail fully distributed costs, the rate maker should exercise his judgment as to the measure of rate that will produce the most net—with due regard for the development of volume through establishment of relationships between producers.

Alternating rates with different minimum weights are effective means of securing traffic that cannot be handled profitably at the truckload minimum weight. A rule of thumb for applying this technique is to give the public the minimum weight it prefers but at a rate that covers cost at that weight, and then provide a lower rate, based upon heaviest practicable loading, that offers the public a lower unit cost while productive of greater net to the carrier, there being little difference in cost between the handling of a fully loaded car and a lightly loaded one.

In the past, once a rate adjustment has been published in the tariffs the papers have been sent to file and the matter forgotten until or unless some trouble arises. No other business is conducted in this manner. Operators in competitive fields watch both the market prices and their costs on a daily or even hourly basis.

Great changes have taken place in the distribution of rail costs. Terminal costs have gone sky high as labor rates have risen, while dieselization and other improvements have held line-haul costs steady. Virtually nothing has been done to revise the rates on traffic formerly profitable but now deficit producing. The railroads should conduct a continuing review not only to keep themselves profitably competitive but to eliminate and correct developing losses.

The Rate Structure of the Future

As previously pointed out, differentials in the old rate structure were not scientifically devised. Industry adapted to them largely as it found them—and in the process, of course, acquired a certain degree of vested interest in their maintenance. Competition has disrupted these relationships to a considerable extent, but with few ill effects on the shipping public.

Fixed differentials are symbols of a static society and more important factors are constantly at work to determine the size, nature, location and marketing areas of private business. Modern business is highly adaptable to changes in its environment and does not need to rely upon crutches supplied by the railroads.

Many years ago the commission prescribed a relationship between the rates on livestock and those on fresh meat designed to equalize costs of meat packing in the Midwest with those of packers in the consuming area along the Eastern seaboard. This did not stop the meat packers from moving their slaughtering operations to the livestock producing areas when the economics of the situation made it desirable to do so and for the benefit of all concerned the profitable meat traffic was relieved of the burden of supporting an unprofitable livestock movement.

No one expects to ship sand and gravel from coast to coast, and it will likely come to pass that many other movements that have become an unbearable burden upon other traffic will have to undergo some adjustment.

Regional assembly plants are commonplace in industry. These are established not necessarily to eliminate cross-hauling but generally for the purpose of reducing the transportation of a bulky finished product to gain the economies of shipping the components in a more easily transportable form.

The traditional differentials of the past can and should be maintained only to the extent that all of the resultant rates meet the twin tests of covering the cost of service while not exceeding the ceiling set by competition. Like Sinbad the sailor, with the old man of the sea upon his back, the railroads are saddled with a burden of the past that is sapping their energies and from which they must eventually take the necessary steps to free themselves.

Since this analysis is an interpretation of the experience and observations of a single individual, the conclusions drawn may well reflect personal limitations in dealing with so extensive and complex a subject. It is hoped, however, that it has been established—

- That the rate policy of the past was not something ordained in heaven but a practical method of coping with the problems of the day;
- That changed conditions call for changed policies;
 and
- That intelligent analysis and careful planning are much to be preferred to a *laissez-faire* attitude of "muddling through" until evolution produces a new philosophy capable of surmounting the challenge of the future.



A 62-PASSENGER COACH by day . . .

Pullman's New "Slumbercoach"

An interior arrangement has been developed by the Pullman Company (the operating company, not Pullman-Standard) by which a standard passenger car body 85 ft long and 13½ ft high can be used as a high-capacity coach for day travel or as a sleeper of half as much capacity at night. The layout is adaptable to either new equipment or to existing equipment being remodeled.

Three basic "Slumbercoach" floor plans have been laid out. Each comprises rooms staggered vertically like duplex-roomettes. In two of the three plans all rooms seat two persons much like an ordinary de luxe coach, although somewhat more privacy is offered to the passenger than in a fully open coach. Also the seats are divided unequally, with the window seat extending about two-thirds the width of the compartment. The two fit snugly alongside each other so that day passengers can share the double-seat space equally without discomfort.

In the original design displayed by Pullman, the recline of the seats was not adjustable. The design now contemplated for installation provides adjustable recline.

For nightime sleeping occupancy the window (widest) seat makes up into a bed. The narrow seat portion adjacent to it can stay as it is, or the seat part can be folded up for added convenience in the use of the toilet and washing facilities across the entrance way (other end of the enclosure) from this seat.

Normally these individual facilities will be available to the passenger only when berth service is being furnished. One men's and one women's general washroom will be installed at the blind end of the car for use when the car is in ordinary day coach service. The hinged door that shuts off each room from the aisle, when opened 90 deg, closes off the compartment containing the toilet and washbowl (both of which fold into the wall when not in use). During the day the doors are expected to be locked in the open position for free entry and exit.

While Pullman has applied for patents on certain features of the "Slumbercoach," the company is offering it as a service which the railroads are free to use. Pullman would prefer to operate this service as that organization has the porter and other personnel, as well as facilities for servicing the car mechanically and with supplies.

The charge to the passenger presumably would be at the regular coach rate. For berth service a single coach fare plus the approximate present charge for an upper berth would entitle a passenger to single occupancy of the room with the attendant linen service.

Heating and air conditioning would be centrally controlled. Some control could, however, still be exercised by the occupant of each room by varying the quantity of air delivered to it. Interior finish is largely plastic for attractive decor and for easy cleaning and damage resistance. Floor covering is rubber or vinyl tiling.

The beds are 25 in. wide by 6 ft 5 in. long and fold into the wall. They will be premade with sheets, pillows and blankets. They can be readily operated either by the passengers or the porter. The toilet facilities are fully available when the bed is opened down.

The rooms are laid out with ample space for passengers' baggage and clothing in either berth or coach



... OR A 31-BERTH SLEEPER by night.



THERE IS AMPLE SPACE at the foot of the bed opposite the small seat for toilet and washing facilities.

service. Each accommodation is also equipped with fasteners for anchoring to the aisle seat specially constructed bassinets or cribs which are part of the car's equipment.

To provide for parents traveling with a child too big to sleep with but too young to leave alone, there is a third plan in which some of the rooms extend most of the width of the car. These extra wide rooms contain three seat sets, two of which convert into beds, and have a corridor at the side of the car. In all cases, the passageway, whether in the center or at the sides, is the standard 2-ft width.

Benchmarks

and Yardsticks

THE SIXTH, AND FINAL, VOLUME of the monumental biography of George Washington by Dr. Douglas Southall Freeman was published some months ago. There were to have been seven volumes, but the untimely death of Dr. Freeman prevented the completion of the work—which, however, covers in the six volumes all of Washington's life except the last years preceding his death.

Quite apart from its high historical interest, this biography constitutes one of the best text-books there is or ever can be on self-education; on character development; and on the principles of management. Because Washington educated himself. He hewed out his own character from raw material which at the start, while promising, was a good long way from perfection. And he studied the requirements of leadership and perfected himself in their mastery.

Washington was not a miracle. He was not a ready-made genius. He attained his high level of accomplishment by working it out step by step for himself—he got practically no help from his parents, or from anybody else for that matter.

In this sixth volume of the biography, there are forewords by two of Dr. Freeman's associates—both of them historical scholars—and both of whom hold in high esteem, not only George Washington, but also his biographer. Because Dr. Freeman was, in his way, just as much a self-made prodigy as Washington was.

Dr. Freeman worked full time as a newspaper editor. He was a daily radio news broadcaster. He gave frequent lectures. He was an active member of many organizations and a director in several companies (including the Southern Railway). And on top of all that he found the spare time to make a name for himself in historical biography that is without parallel in modern times.

And it was no miracle. He made up his mind what he wanted to accomplish. He set himself a system of daily routine which, if faithfully followed, would produce the result he wanted. He followed the system and, in the fullness of time, the expected results inexorably came to pass.

In one of the forewords to this sixth volume there is reference to the "quenchless ambition of an ordered mind"—which the writer attributes to Dr. Freeman, as well as to Washington. "Native ability and high character are not enough," observes this commentator (Dumas Malone); "industry and system are indispensable to those who would achieve greatly. He [Dr. Freeman] counted on them in his own case, and if there have been other American historians who have matched him in industry (which is doubtful), no one of them seems ever to have matched him in system." J.G.L.

Television by Microwave



ACTIVITIES ALONG THE PLATFORMS of both railroads at Englewood are viewed by the camera on the metal post and shown...



ON THE TELEVISION SCREEN in the Englewood stationmaster's office. The signals are transmitted at the same time by . . .



MICROWAVE TO THIS RECEIVING antenna on the LaSalle Street Station, six miles away, where scene at Englewood is shown on another screen.

. TESTED ON ROCK ISLAND

What is reported to be the first test of industrial television with microwave transmission to a distant office has recently been completed by the Rock Island in Chicago. The movement of trains, passengers' baggage and mail at an important outlying passenger station was chosen as typical of the type of happenings that could be "viewed" by television and used effectively in "picture" form at a central point or at a remote place.

The choice for the test was the Englewood station where the Rock Island crosses the Pennsylvania at 63rd Street about 6 miles south of LaSalle Street Terminal in downtown Chicago. The television camera was on top of an 8-ft pipe post set in the platform near the crossing of the two railroads at Englewood. This camera was controlled by a monitor operated by the stationmaster in his office in Englewood station. By "pan" control, the camera could be faced in any direction in a complete circle, thereby viewing trains, passengers, mail trucks, etc., on or approaching the platforms of both railroads. The camera is capable of working in illumination of 20 foot candles of reflected light, which is easily supplied by platform lighting. A special type coaxial cable connected the camera to the monitor in the Englewood stationmaster's office, its maximum length being about 600 ft. In addition to providing power, sweep voltages, amplification, operating controls and adjustments for the camera, the monitor gave the stationmaster a look at what the camera is "seeing."

Use of Radio

Also at Englewood, the scene picked up by the camera was fed from the monitor to the microwave transmitter. There the signal modulated the microwave carrier which was conducted by coaxial cable to the antenna "dish" on the roof of the Englewood station. From there the signal was beamed across Chicago to the receiving antenna "dish" on top of the LaSalle Street Terminal, six miles away. This antenna was connected by 150-ft coaxial cables to receiving equipment which demodulated the signal and passed it to a 17-in. screen slave monitor (television receiving set) in the Rock Island offices in this station building. This screen showed concurrently what was happening at the platforms at Englewood.

This Rock Island test installation of closed circuit television demonstrated the value of visual information about operations on platforms, just as has already been done in such railroad applications as reading freight car initials and numbers at receiving yards, checking equipment, car inspection, yard surveillance and railroad security work. Also the Rock Island test demonstrated the efficiency of microwave links for transmitting visual information on railroad operations to any point on the system.

The television and microwave equipment used in this test was provided by the Federal Telephone & Radio Co., Clifton, N. J., manufacturing division of International Telephone & Telegraph Corp.

Few Friends for Present Controls

At traffic symposium only a solitary trucker sees virtue in extending regulation

The proposal that all special regulation of the transportation industry be abolished, as no longer necessary or desirable, was made at the Third Traffic and Transportation Conference and Seminar of the American Society of Traffic & Transportation at its September 8-9 session at the Harvard Business School, Boston. The proponent was Albert P. Heiner, vice-president, public relations and traffic, Kaiser Steel Corporation, Oakland, Cal.

"Would we institute regulation in transportation today if we didn't already have it?" Mr. Heiner asked. He thought not. He said that steel and petroleum were just as necessary to our national life as transportation service—yet neither of these industries is specially regulated in any way, even though there are far fewer competitors in these industries than there are in transportation.

An Opposing Viewpoint

At the opposite pole from the opinion of Mr. Heiner was that of a spokesman for the common-carrier trucking industry, D. L. Sutherland, chairman of the Middle Atlantic Transportation Company, New Britain, Conn. He expressed a viewpoint parallel to that recently publicized by the American Trucking Associations in national advertising, i.e., that the railroads are prospering, the truckers are prospering; the air lines, the water lines and practically everybody else is doing just fine—so why be worried about transportation? Mr. Sutherland went on to say, however, that he was not opposing all change in regulation—in fact, he'd like to see more of it, e.g., of those carriers now exempt. He defended "value" rate-making and condemned "selective rate-cutting."

The program of the meeting was divided into three "panel" sessions—besides which there were two luncheon sessions and one dinner session, each with a prominent speaker. The luncheon speaker on the first day was President Patrick B. McGinnis of the New Haven. At the second day's luncheon Commissioner John H. Winchell of the ICC took as his subject a description of the organization and functioning of the commission.

The dinner speaker was Sir Gilmour Jenkins, president of the Institute of Transport of Great Britain. The Institute of Transport was organized in 1919 and is a professional society comparable to the engineering and other such associations in this country—and is the organization after which, to some degree, the American Society of Traffic & Transportation has been patterned. Accordingly, the burden of Sir Gilmour's address was the experience of the older British society which, he thought, might be helpful to its younger counterpart in the United States.

Mr. McGinnis expressed great optimism for the future of the railroad business, provided some of its internal shortcomings and adverse regulatory restrictions are corrected. He spoke with approval of the approach of the utilities to rate-making—with their "two-part" rates, one charge to the customer for the facilities provided and another charge for the use of these facilities.

The New Haven president was critical of the railroads for having passenger trains "with seats 5 ft from the ground," and of their slowness in going to automation. "There is no reason why we can't run trains without train crews," he said, "just the way they run elevators without elevator operators."

He raised the question why it is as difficult as it is to merge railroads—since mergers are going on every day in other industry, where there certainly isn't any more competition than exists in transportation. He was critical of the "commodities clause" which forbids the railroads to engage in other business. If any other industry is permitted, as it is, to go into transportation by truck or barge—then "why shouldn't we in the transportation business be allowed to go into their business too?"

He believes common carriers should have the same right to make contract rates that unregulated and contract carriers have.

As for the passenger business, he believes it has a promising future in the middle-distance-haul field, provided the right kind of equipment is used and provided the service is priced attractively to produce

WHAT IS A "TRANSPORTATION STATESMAN"?

Professor George P. Baker (president of the Transportation Association of America) gave the A.S.T.&T. members the following characteristics of a transportation statesman:

1. He knows his own branch of the transportation business thoroughly, and its relationship to the economic life of the country as a whole; he is also able to see where the special interests of his own industry lie. He can distinguish between the long-run and short-run advantages of his industry.

2. He is modest in his reference to and use of the foregoing knowledge.

3. He is genuinely interested in getting the "other fellow's" view—and especially to seek out places where he and the "other fellow" can find common ground.

 He is willing to compromise, rather than stand his ground and see all progress stopped.

Dr. Baker particularly emphasized this fourth characteristic. He said that, while no one transportation interest can have its way in bringing changes in national transportation policy, it probably is possible for any one group to block any change whatsoever. Hence, progress can come only from compromise and compromise calls for statesmen. Each transportation group has some of these statesmen, he said.

a high load-factor. "Our failure in the passenger business," he said, "lies entirely in the marketing field."

The three panel discussions were set up as follows: Competition Between Regulated and Unregulated Transportation." Paper by Professor Harold Koontz, University of California at Los Angeles. Comment by Frank W. Hussey (National Council of Farmer Cooperatives, Presque Isle, Me.) and D. L. Sutherland (identified supra). Moderator, Professor George P. Baker (Harvard Business School). Presiding, Professor G. Lloyd Wilson (University of Pennsylvania).

What the Panels Talked About

"Competition Within Forms of Transportation." Paper by Professor Kent Healy (Yale). Comment by J. W. Hersey (Commercial Transport Corporation, Houston, Tex.) and William White (president D&H). Moderator, L. F. Whittemore (chairman, Brown Company, Berlin, N.H.). Presiding, F. A. Doebber (Citizens Gas & Coke Utility, Indianapolis).

"Competition in the Public Interest." Paper by Charles L. Dearing (Brookings Institution). Comment by Ralph S. Damon (president, Trans-World Airlines) and Albert P. Heiner (identified supra). Moderator, Dr. E. Grosvenor Plowman (U.S. Steel). Presiding, K. H.

Jamieson (Eastman Kodak).

Professor Koontz gave an outline of the present situation in and outlook for transportation which called for the attention given to the subject by the President's Cabinet Committee on Transportation; and he set forth possible attitudes toward the future relations of government to transportation. The more competitive an industry becomes, the less it needs regulation, he said—competition, where it exists, being an admirable regulator. Indeed, regulation where there is competition is likely to become, not merely unnecessary, but a positive detriment to the public interest—this because, under competition, management has to be alert to the market and to what competitors are doing. If management has to keep orienting its thinking on the regulators, instead of on the market, it is apt to fall short of optimum performance.

For two decades, Professor Koontz pointed out, while

WHY PLOWMAN IS "PRO-RAILROAD"

U.S. Steel's E. Grosvenor Plowman said he was "pro-railroad" because "I am also pro-truck and pro-waterway."

He believes in private enterprise and in competition in transportation. He does not believe that such competition can survive unless conditions are established which will make it possible for the railroads to finance themelves adequately from private sources, to keep pace with the growth of the country.

Because of the essential nature of railroad service, unless the railroads are given an environment in which they can survive under private ownership, "they will fall into the clutches of government." "I am pro-railroad," Mr. Plowman said, "because continued ability of the railroads to thrive and grow is a necessary condition to continued healthy competition in transportation."

the ratio of unregulated transportation to total has been constantly mounting, effort has persisted to put equal regulation upon all carriers. Yet true equality under regulation is quite impractical of attainment. Reasons: (1) private transportation can neither be regulated nor outlawed; (2) it's probably impracticable to apply the counterpart of a "commodity clause" to shippers; and (3) it's also probably impracticable to bring presently "exempt" carriers under regulation.

Professor Koontz foresees that the "gross national product" may double in the next two decades—and that the demand for transportation service should likewise double in that period, thus making it still more unlikely that equality of transportation agencies under national policy is attainable by "regulating them all alike." As the demand for transportation grows, most of the increased business will go to those companies with the most alert and agile managements—and the successful companies will, thus, not likely be those which are being operated to please the regulators rather than to please

The Country Has a Choice

Professor Koontz said that, in their attitude toward transportation, the American people have four alternatives to choose from, viz.

I. Continuance of the status quo, with common carriers

greatly handicapped.

the customers.

II. Equalizing conditions by "regulating them all alike."

III. Free competition—no regulation except that to which all other industry is subjected, e.g., by the anti-

trust law and the Robinson-Patman Act.

IV. Limited regulation—only enough to protect the public interest in continued "common" carrier" service. For example, common carriers would have to get certificates and, in return for this protection from unlimited competition, they would be expected to serve all comers. On the other hand, regulation of their rates would be greatly reduced (e.g., no specific rates set by regulators, who would limit only maximum rates or those plainly non-compensatory). Common carriers would not be required to continue unremunerative services unless such losses were covered by a public subsidy. Contract carriers' actual rates would be made public and common carriers would be allowed to meet any competition, where

they can do so without loss.

Professor Koontz indicated his preference for the fourth of the foregoing alternatives, toward the attainment of which he believes the adoption of the Cabinet

Committee Report would go a long way.

In our transportation policy, he observed, we have been striving for two incompatible goals—(1) comfortable stability under regulation and (2) progress under competition. We do not have the stability, because effective regulation is being applied to only a segment of transportation; and we do not have anything like the progress we should have, because so large a segment of transportation remains under regulation and is prevented from competing effectively.

The adverse opinion of Mr. Sutherland of Professor Koontz' analysis has been reported *supra*. Mr. Hussey's comment was given from the point of view of a potato farmer. He did not believe regulation should be sub-

stantially relaxed for carriers now regulated, nor extended to carriers now exempt.

Professor Healy discussed competition between different companies within the same form of transportation. He said that the essence of competition, as Adam Smith saw it, was complete freedom of a firm to enter or withdraw from a business without asking anybody's consent. From this standpoint, there has not been complete freedom for the railways since the beginning of the industry; and there would be few to advocate so much freedom, even today. But, in addition, the railroads up till a few decades ago had a substantial monopoly of transportation and very complete regulation of them became generally accepted. This intensive regulation has since persisted although the justification for it has vanished.

The nub of inter-railroad competition is the relation of price to cost of railroad service—a fact which has been largely obscured by the lack of cost-finding by the railroads. There has been objection to such railroad cost-finding, because so many railroad costs are "common" or "joint."

Times have changed, however, Professor Healy indicated. The railroads' new competitors do not have so many "common" costs—a far larger proportion of theirs are "direct." With no passenger service, truck operators have no problem of separating freight and passenger costs. But the railroads still seem to prefer to look to overall results—hoping these will be satisfactory, regardless of the relative profitability or unprofitability of any particular rate.

The "load factor" is an important consideration in the cost of a particular transportation service—yet, at least until relatively recently, the railroads have frequently very largely ignored it. For example, until the thirties, the railroads charged the same passenger fare in coaches and Pullmans, despite the much more favorable load factor obtained with coaches.

Competition Sacrificed

There was little practical objection to railroad neglect of the cost-rate relationship up to a few decades ago—but this neglect was poor preparation for conditions that were to come; and which now are with us. The railroads, with some rates far above their costs, provide an "umbrella" for their new competitors. This situation is changing—as witness the railroads all-commodity or any-commodity rates, and their uniform charges regardless of contents for moving truck-trailers on flat cars. It would appear, said Professor Healy, that a lessening of regulatory restrictions would encourage the railroads to get more actively into competition based on competitive costs; and this would be a good thing.

As to how many competitors there should be in the railroad industry, Professor Healy said that his studies indicated, on the average, that the smaller railroads appeared to get along net-earnings-wise somewhat better than the larger companies—sometimes, even, with much lower densities of traffic. This observation applies to freight traffic. As far as passengers go, Professor Healy would look with favor on concentrating the traffic on fewer routes, to secure heavier load factors.

Professor Healy said that—on an international scale—competition was now going on between those countries which are turning to socialization of their industry, and

those retaining private ownership to a large degree. As far as the transportation side of this competition is concerned, most countries, except on this continent, have gone to socialization (some highway services alone omitted, here and there). To the degree that we believe in private enterprise in this country, we should adopt those policies which indicate they will promote maximum efficiency under our system. His observation convinces him that—while there is some obvious duplication in extensive inter-railroad competition—the cost of this duplication is a bargain price to pay for the greater efficiency in other respects that extensive inter-company competition brings.

Professor Healy made quite a study of the British railways back in the twenties, after they'd been merged from over 100 companies into 4 regional systems. There was so little competition left on the British railways after their merger into 4 regional systems, he said, that there wasn't enough left to fight for, when the proposal was made to abolish competition altogether, by socialization.

Mr. White said he did not believe it was practicable to have complete freedom of rate competition as between railroads—for the simple but cogent reason that public policy cannot permit an essential railroad to shut up shop merely because it has failed to compete successfully. Since there must be some check on railroad pricing beyond that provided by competition, it follows that some degree of regulation of inter-railroad competitive practices must probably be maintained.

He believes, however, that the railroads should be permitted and encouraged to combine their passenger services—this being a special problem because of its deficit status and because there isn't enough total traffic left to provide economical load factors for parallel services. He hopes the new trains that are coming along will be successful in reducing costs and attracting more traffic, but he does not believe that they alone are going to solve the problem of the passenger deficit; a considerable reduction of competition, in his opinion, will also be necessary. In addition, the railroads must continue their efforts to abandon unprofitable services. As far as the size of companies is concerned, Mr. White said the chief difficulty of the large company is that of effective internal communication.

Mr. Hersey, discussing competition among water carriers, said—rather than regulating the unregulated, his prescription would be to deregulate the regulated. The (Continued on page 60)

ARE TRUCKERS "COMMON CARRIERS"?

Truckers are not the same kind of common carriers that railroads are. Truckers have their pet customers and if anybody else wants their service, they are apt to say they're too busy. Shippers are peculiar in their attitude toward truckers and railroads. If a trucker refuses to serve them, they don't complain—but if a railroad can't give them a car when they want it, they get on the phone to the regulatory authorities at once. Such was the report of E. S. Loughlin, chairman of the Connecticut Public Utilities Commission, to the A.S.T.&T.

WHY RAILROADS SUPPORT AN UP-TO-DATE TRANSPORTATION POLICY



Consider the extraordinary situation that the railroads of this country face today.

Here is a fundamental industry, performing a service essential in peace and irreplaceable in war; which directly employs over one million people; which provides, maintains and improves, at its own expense, the roadways and other extensive facilities which it uses — and which pays taxes on those roadways and facilities. Here is an industry operating with constantly increasing efficiency; which is conservatively financed, with a steadily decreasing total of fixed charges.

Yet here is an industry which earns a return on investment of only about $3\frac{1}{2}$ per cent — among the very lowest of all industries; an industry so restricted by the application of laws governing transportation that frequently it is not permitted to price its services on a competitive basis.

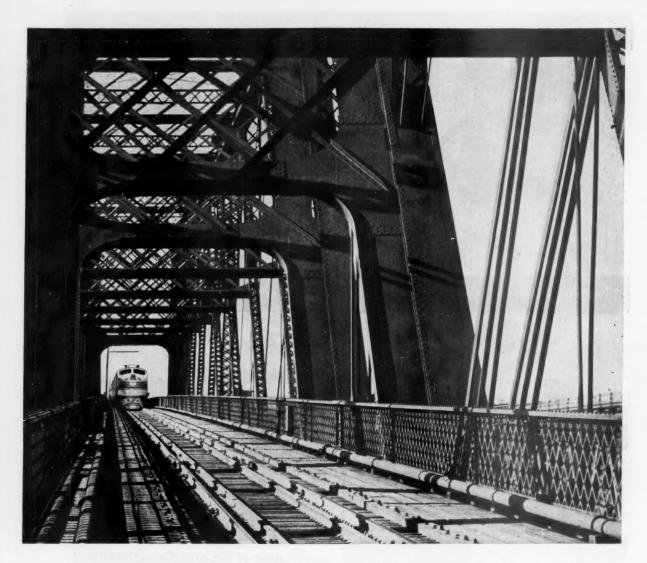
How can such a situation have arisen in a nation devoted to the classic concepts of free enterprise and equal opportunity?

An important part of the answer is clearly indicated by the recent report of the Presidential Committee on Transport Policy and Organization created last year by President Eisenhower. This Committee consisted of five members of the President's Cabinet and two other high government officials. It was charged with responsibility for making "a comprehensive review of over-all federal transportation policies and problems."

The report of the Committee, released by the White House in April, opens with this sentence:

"Within the short span of one generation, this country has witnessed a transportation revolution.

"During this same period," the report continues, "government has failed to keep pace with this change . . . regulation has continued to be based on the historic assumption that transportation is monopolistic despite the . . . growth of pervasive competition. The disloca-



tions which have emerged from this intensified competition, on the one hand, and the restraining effects of public regulation on the other, have borne heavily on the common-carrier segment of the transportation industry...

"In many respects, government policy at present prevents, or severely limits, the realization of the most economical use of our transportation plant."

To the end that all forms of transportation should be developed to their greatest economic usefulness, the Cabinet Committee recommended, among other things, that:

"Common carriers . . . be permitted greater freedom, short of discriminatory practices, to utilize their economic capabilities in the competitive pricing of their service . . ."

Legislation to give effect to Committee recommendations has been introduced in Congress.

Passage of this legislation would not give railroads any rights that other forms of transportation do not already

have or would not receive. The legislation recognizes that each of the competing forms of transportation has advantages in handling different kinds of shipments, moving between different points and over different distances. It proposes that each type of carrier be given the freest opportunity to do the job it can do best, at the lowest reasonable cost.

That's the way toward the best and most economical service, to the benefit of businessmen and taxpayers — and of the consuming public which, in the end, pays all transportation costs.

For full information on this vital subject write for the booklet, "WHY NOT LET COMPETITION WORK?"

Association of American Railroads

740 Transportation Building Washington 6, D. C.

No bills for bags, drums, containers

Easier, safer loading and unloading



No sanitation problems in transit

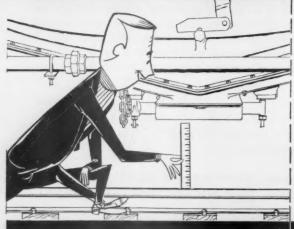
No packing, racking or stacking





Far more clearance for unloading

Bulk shipping of dry, granular and powdered products in General American Airslide® Cars is safer, easier—and costs less!





Over 1000 Airslide Cars now in service or on order. A small blower is all you need to unload cars into any conveying system. Write for bulk shipping information on your products.



GENERAL AMERICAN
TRANSPORTATION CORPORATION
135 South La Salle Street, Chicago 90, Illinois

AIRSLIDE CARS — now successfully shipping flour, semolina, sugar, starch, plastics, chemicals and other products.

what good is half a wheel?

Good enough to show in cross section the soft gray iron hub metal which is easily machinable. This means faster and less costly mounting on axles.



And good enough to show the extreme hardness of the white metal (chilled iron) that gives maximum service with minimum loss of metal, and assures retention of rotundity throughout the long life of the wheel.



Production of chilled car wheels in 23 cities throughout the U. S. assures quick, low cost delivery from the AMCCW plant near you.

The improved AMCCW wheel, adopted in 1950, has a better distribution of metal from hub to flange to withstand the stresses developed under today's operating conditions. Originally a theory, backed by laboratory tests, this is now a fact backed by the performance of over five million of these wheels in service.

A spectacular reduction in failures, combined with the advantage of fewer loose chilled wheels and far less derailments charged to worn flanges, has given the chilled car wheel a safety record unequalled in freight car service.

Available locally Short-haul delivery Reduced inventory Low first cost Low exchange cost Increased ton mileage High safety standards AMCCW plant inspection Easier shop handling



ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 North Sacramento Boulevard, Chicago 12, III.

Albany Car Wheel Co. • ACF Industries, Inc.

Marshall Car Wheel & Foundry Co. • Griffin Wheel Co.

Pullman-Standard Car Mfg. Co. • Southern Wheel (American Brake Shoe Co.)

FEW FRIENDS FOR PRESENT CONTROLS

(Continued from page 55)

inland waterway carrier business is booming—from 17 billion ton-miles in 1942 to 80 billion in 1954. Only a handful of these carriers handling a small fraction of the total business, are now regulated.

Mr. Dearing said that the Cabinet Committee Report gave needed recognition to some shortcomings in contemporary government policy toward transportation. This policy, in his opinion, has been lacking in precision. It has taken little account of the existence of competition or the constructive possibilities inherent in its existence.

Government restricts transportation with one hand—with the other it engages in extensive transport promotion. The conflict in policy fails to give the public the full benefit which would come from either all-out regulation or all-out competition. Transportation policy has been a problem in every country, and most of them have gone to socialization as a remedy. But there is no need to resort to that expedient here—that is, if policy as regards regulation is modified to conform to facts.

Improvement of highways and inland waterways has traditionally been a government function, the speaker went on to say. This same practice has now been applied to air transportation. Whether this practice, on the vastly extended scale at which it is now occurring, is compatible with continued competitive private ownership of transportation depends entirely on the degree to which government recoups its expenditure by charges levied on the users of the facilities it provides. As far as international air and water line service is concerned, the speaker did not see continuing subsidies as presenting any particular problem to domestic privately financed transportation—and he believed some reduction in competition in such services would be justified, in order to minimize the subsidy cost.

Cost Differences Fundamental

A difficulty in competition between railroads and other methods of transport lies in the fundamental differences in their cost characteristics. (For instance, practically all expenses of truck operation are "direct," and vary in ratio to truck-mileage—while a large part of railroad expense is "overhead" and goes on continually, with no variation depending on traffic volume.) The railroad rate structure, and particularly the general rate level, used to be the ICC's primary concern—but now minimum rates of competing agencies have become a major problem. The problem is further complicated by subsidies, e.g., to water carriers. It is difficult for the ICC to take subsidies into account—hence, in prescribing minimum rates for competing agencies of transportation, it may run the risk of directing traffic to an agency with higher total costs.

Government has singularly failed to provide an environment in which genuine private enterprise in transportation can thrive. As long as government has no settled policy of collecting from users the full cost of the transportation facilities it provides, investors and managers of privately supported transportation cannot plan ahead—they do not know what kind of subsidies their com-

petitors are going to be getting a decade hence. Hence, it is hard to estimate how much traffic the various agencies can count upon.

In this important area the ICC has developed no consistent principles: Sometimes it allows a competitor to give full effect to his lower costs in making rates. At other times it restrains him—to prevent him from capturing too much (or perhaps any at all) of the traffic which he can move more economically than his competitors. The ICC is in the "untenable role" of deciding what constitutes a "fair share" of traffic for the several agencies.

An Artificial Environment

In Mr. Dearing's opinion, there has been undue delay in trusting to wholesome competition to settle the question of what agency shall get what traffic—and too much reliance on regulation, which obviously is not going to be able to produce an economic solution to this problem. Mr. Dearing would retain enough regulation to assure continued common carrier service and to restrain arbitrary discrimination by these carriers—but, beyond that, he'd trust largely to competition rather than regulation to decide the issue.

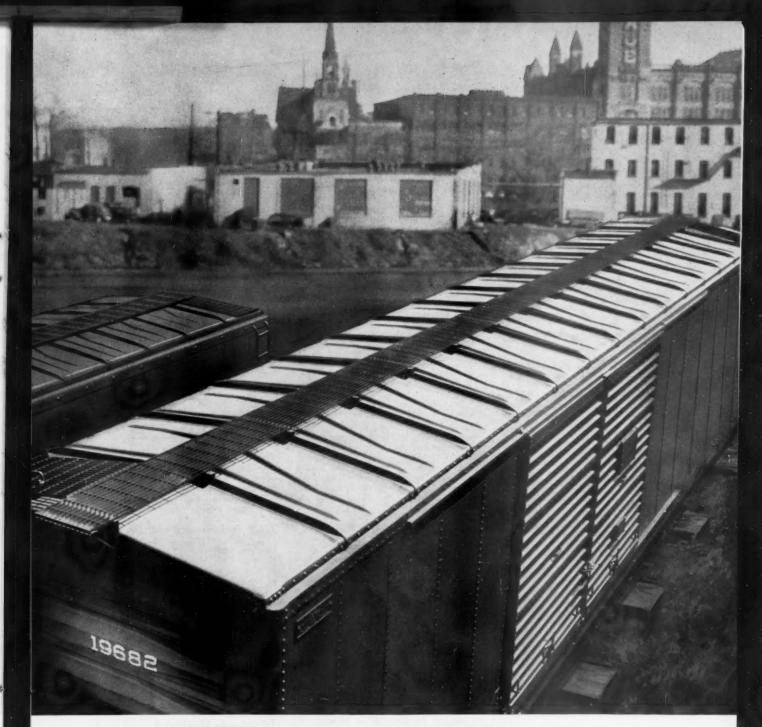
Mr. Damon said that he agreed with most of Mr. Dearing's analysis—in particular that he believed some degree of regulation is necessary in order to continue the common carriers in the necessary function they are performing.

However, he did not agree with the implication in Mr. Dearing's suggestion that competition should be minimized in the nation's international air services—as an economy measure. As a matter of fact, he said, the establishment of competition in this country's overseas air services has had the effect of greatly reducing operating costs—and hence the amount of subsidy necessary to sustain the service. He emphatically agreed with Mr. Dearing when he said that regulation was going too far when it took upon itself the function of dividing traffic between the competing agencies.

Presiding at the Boston session was the A.S.T.&T. president, C. J. Goodyear (traffic manager, Philadelphia & Reading Coal & Iron Co.), who shared the dais with Robert J. Bayer (editor, Traffic World), chairman of the board of the society. E. V. Murphy (assistant vice-president, New Haven) was general chairman of the conference; and William H. Day, manager of transportation of the Boston Chamber of Commerce, was toastmaster at the two luncheon sessions. The newly named dean of Harvard Business School, Stanley F. Teele, welcomed the visitors at their opening session.

AMERICA MUST MAKE UP ITS MIND

One of the problems that Americans have got to resolve in the next ten years is whether or not they are going to continue to have common carrier transportation service. If they decide they want to keep on having it, then they have got to give the common carriers conditions which will protect them from irresponsible competition by private carriers. Such was the admonition of Charles Dearing of the Brookings Institution to A.S.T.&T. members.



KEEPING THE Standard UP keeps the price down!

Experience has taught us that a quality item not only *lasts longer*, but delivers *more efficient* service during its lifetime.

The Standard DIAGONAL PANEL ROOF

shown above is a good example. It is *lighter* for equal strength, *stronger* for equal weight. It adds structural rigidity to the car. It costs less to buy and use, and it makes money for the road by keeping cars on the line, producing.

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY
GENERAL OFFICE: 4527 Columbia Avenue, Hammond, Indiana
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MANUFACTURERS OF—Standard Improved Dreadnaught Ends—The Standard Diagonal Panel Roof — Standard Metal Floor Protectors — Standard Coupler Operating Device — Standard Positioning Device with Coupler Height Adjustment—and The Standard Wheel Truing Machine.

Organizations

(Continued from page 16) Central; and W. T. Wilson, assistant vice-president-personnel, Canadian National. Information about the group, its activities, and the meeting, is available from D. N. S. Robertson, Personnel Department, Canadian Pacific, Windsor Station, Montreal, Que.

The Pacific Railway Club will hold a dinner meeting at the Mart Club, San Francisco, at 6:45 p.m., September 22; speaker will be Russell Bjorn, public relations counsel and manager-director, Woodwork Institute of California

Traffic

Avis Announces "Rent Here. Leave it There" Service

Establishment of a nationwide "rent it here, leave it there" plan was announced last week by Richard S. Robie, president of Avis Rent-A-Car System. Under the plan a traveler can rent an automobile at any Avis station in the U.S. and leave it at any other Avis office. The Avis firm then returns the

car to its original base.

The plan, Mr. Robie said, is primarily designed for short-trip convenience. Pointing out that many business men need an automobile to cover their territory but do not have time to drive both ways, Mr. Robie said his organization's new plan permits a salesman to take a train or airplane to a central point in his territory, pick up a rental automobile at the terminal and proceed on his calls by automobile. which he may leave at his last stop.

New Facilities

PRR Modernizes Freight Station in Toledo

Faster handling of local freight by as much as 24 hours was promised by the Pennsylvania in announcing that its newly modernized freight station at Olive and Water streets, Toledo, will go into operation September 19. With the \$150,000 remodeling job completed, the PRR said it would immediately abandon its old Monroe Street station. That ancient landmark will be razed and the property of more than an acre converted to a public parking lot some time this fall.

Pennsylvania officials pointed out that the parking facility, just a block

from the edge of the shopping district, would provide much needed relief for present downtown parking congestion. Contracts for the parking concession already have been let. The move also will improve street traffic conditions near the old station. Trucks no longer will be parked in loading zones extending onto Water and Monroe streets, and 60% of the freight cars formerly moved down PRR tracks on Water Street will be eliminated.

The new station has off-street loading docks and parking area for customers and employees. The Street track will continue in limited use to give direct service to half a

dozen industries.

W. G. Dorwart, superintendent of the railroad's Eastern Division, said: "We consider this move to be not only a great civic improvement in Toledo, but a further indication of our renewed campaign to improve service to our merchandise freight customers here. We are now looking forward to a renovation of our passenger station. Installation of new boilers some time this fall will be the first step.'

Mr. Dorwart said that in addition to the freight station operation, the Olive Street building will provide headquarters for the telephone and signal inspector and maintenance force, office of the district claim agent and a room for employee safety meetings. Ninety per cent of rehabilitation work was done by regular maintenance forces of the railroad, with all materials being obtained from local suppliers.

Financial

Examiners Recommend ICC Approval of IT Purchase

Examiners Paul C. Albus and G. M. Eddy have recommended that the Interstate Commerce Commission approve the purchase of the Illinois Terminal by an 11-road group forming the Illinois-Missouri Terminal.

The examiners specifically recommended that the commission approve issuance by the Illinois-Missouri of \$20,000 of common stock consisting of 2,000 shares at \$10 per share, these shares to be sold to the member roads.

The roads participating are the Baltimore & Ohio; Chicago & Eastern Illinois; Burlington; Gulf, Mobile & Ohio; Illinois Central (parent of Mississippi Valley Corporation); Litchfield & Madison; Nickel Plate; Frisco; Wabash; Rock Island and New York Central. The examiners recommended that the Alleghany Corporation and Pennsylvania be authorized to acquire indirect control by virtue of their control of the New York Central and Wabash, respectively.

As part of the transaction, Illinois-Missouri proposes to sell to the Bi-State Agency for \$13,500,000 the McKinley Bridge Property at St. Louis which it would operate under lease. This sum would be paid in cash to Illinois Terminal in addition to \$6,515,635 to be borrowed.

As to the opposition of the Toledo. Peoria & Western, the examiners stated that Illinois Terminal had rejected its purchase offer and had the right to accept that of Illinois-Missouri. They noted that TP&W was invited to participate in the group purchase and held that the new capital made available will benefit the road.

Chicago, Rock Island & Pacific. —Siockholders will vote December 1 on a proposal to split the common stock two-for-one. The split, which would require ICC approval, would become effective in January 1956. Present common shares outstanding total 1,460,788, Last week the stock was selling at about \$98 a share.

Toledo, Peoria & Western.Joint Control Plan.-The ICC ha granted the Rock Island and the Nickel Plate permission to intervene in opposition to the proposed acquisition of the TP&W by the Santa Fe and Pennsylvania (Railway Age, July 18, page 14). Both the Nickel Plate and Rock Island informed the commission that if sale of TP&W stock is permitted they wish to participate on an equal basis with the Santa Fe and PRR and any other roads authorized to take part in the proposed purchase.

The Illinois Central also intervened in the case, requesting the ICC to protect its existing connections with the TP&W for interchange of traffic.

The cities of Peoria, Ill., and Keokuk, Ia., and the Keokuk Chamber of Commerce and the Hubinger Company of Keokuk also intervened in support of the purchase plan.

The Santa Fe-Pennsylvania plan, now before the commission for approval, would have the Santa Fe sell to the PRR at \$135 per share half of the 90,000 outstanding shares of TP&W stock. The Santa Fe informed the commission it has entered purchase agreements with holders of 99.2% of the TP&W stock and expects to acquire the balance. The cost to the two roads would be \$6,075,000 each.

Dividends Declared

CHICAGO & EASTERN ILLINOIS.—25¢, payable eptember 29 to holders of record September 19.

ELMIRA & WILLIAMSPORT.—\$1.19, semiannual payable November 1 to holders of record October 20.

PHILADELPHIA & TRENTON.—\$2.50, aucrtarly, payable October 10 to holders of record September 30.

SOUTHERN.—Mobile & Ohio stock certificates \$2, semiannual, parable October 1 to holders of record September 15.

Security Price Averages

	Sent.	Prev. Week	Last Year
verage price of 20 repre- sentative railway stocks	97.59	96.27	70.54
verage price of 20 repre- sentative railway bonds	98.56	98.42	96.25



A SAFER PLACE FOR YOUR MONEY...

is in Fairbanks-Morse Train Masters,
which monthly are proving that power
and versatility make......

TIM
your soundest motive power buy



FAIRBANKS-MORSE

a name worth remembering when you want the best

DIESEL LOCOMOTIVES AND ENGINES - RAIL CARS AND RAILROAD EQUIPMENT - ELECTRICAL MACHINERY - PUMPS - SCALES - WATER SERVICE EQUIPMENT - MAGNETOS

Move your freight cars with trouble-free

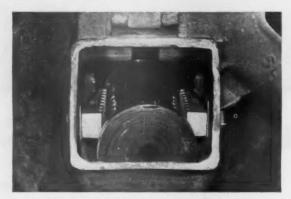
How R-S Journal Stops and Satco lining metal can reduce journal box servicing and maintenance requirements...can speed up train departures and eliminate need for servicing en route.

SATCO and R-S Journal Stops make the conventional waste pack an efficient lubricator. They give better bearing performance at the same time they reduce existing maintenance and servicing requirements. They eliminate old problems and do not add any new ones.

Equip all cars in a consist with Satco and Journal Stops and journal box inspection could be on a periodic basis — would not be required after each humping or switching operation.

The reasons: First, you seldom have to adjust packing and actual adjustment takes less time; second, you keep more oil in the packing, get constant lubrication; and third, bearings run cooler increasing vital oil film thickness.

R-S Journal Stops keep the packing right where it belongs—1" below the journal center line. Time and again road service tests with Journal Stops have proved that packing is undisturbed even after trips of 5000 miles or more. Without R-S Journal Stops, whenever there's a road or switching impact, or heavy brake application, you force the axle out from under the bearing. That crushes the dust guard, forces the box to rise, and squeezes the packing against the bottom of the journal—squeezes the



View of R-S Journal Stop installation with box jacked and bearing, wedge and packing removed. Note shims which permit maintaining nominal clearance on undersize journals.



Two of bearings removed after 38 months service in freight car equipped with R-S Journal Stops. All bearings were in such excellent condition they were reapplied. Crown has extended to point where it is wider than required for "fitted" bearings—but lining has not overrun.

MAGNUS METAL CORPORATION

TO DESTINATION

journal boxes!

oil out of the packing, too. This loose oil is free to splash out the back or front of the box — sometimes does before it can be reabsorbed.

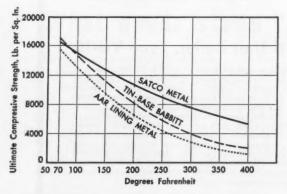
Journal Stops prevent all that. For more miles than necessary to cross the country, you can maintain oil-to-packing saturation ratios of better than 2.75 to one—more than adequate to lubricate efficiently. And because you don't compress the packing, you maintain constant journal-to-packing pressures—assure a constant feed of oil to the bearing.

WHAT SATCO CAN DO

Use Satco-lined bearings and R-S Journal Stops, and you lick the major problems that lead to bearing troubles. Bearings run about 20° cooler on Satco. You get lower operating temperature, higher operating oil viscosity, and a thicker film of oil. That all adds up to increased operating safety and better bearing performance.

Satco has a melting point 150° higher than standard AAR babbitt. It's harder and stronger at elevated temper-

ULTIMATE COMPRESSIVE STRENGTH AT NORMAL AND ELEVATED TEMPERATURES



Ultimate compressive strength of Satco is higher at elevated temperatures but approximately same as other lining metals at starting temperatures. This assures high degree of conformability.

atures. In the laboratory and on the road Satco has actually been run at temperatures of 400° F. with no effect on the bearing. That means high resistance to lint wipers and thread risers.

DYNAMIC LOAD FACTORS AND BEARING LIFE

R-S Journal Stops reduce dynamic load factors and Satco takes the toughest load you'll have. With Journal Stops the bearing always takes the load in the crown where it should, and Satco's extra strength at high temperatures assures added resistance to both wear and load. That means far longer bearing life—no spread linings, no cracked or shelled-out linings.

With Journal Stops you also get reduced and more uniform wheel flange wear, and the prospects are for reduced center pin wear and a lower mortality rate for coil springs. In fact, you cut truck maintenance costs all along the line—get big savings for a very small investment.

Of all the many developments designed to reduce hot boxes, R-S Journal Stops and Satco are the only ones which require no special maintenance or precautions and introduce no new problems to car servicing forces. They put the selection of any alternate type lubricator on a purely economic basis. Also you still have all the other advantages which low-cost solid bearings bring to railroad rolling stock. You can take the maximum load, and make the fastest schedule. Lading gets the smoothest ride. You save excess dead weight per car and get the lowest running resistance in pounds per ton. Best of all, you'll be sure of the kind of bearing performance you want at the lowest possible cost. Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Blvd., Chicago 4.

Solid Bearings

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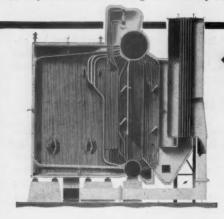
Subsidiary of NATIONAL LEAD COMPANY

one of these C-E standard boilers is DESIGNED FOR YOUR PLANT

If your steam needs range between 4,000 and 120,000 pounds per hour, one of these versatile C-E Boilers will give you economical, standout performance. For while they are standard in design (which means lower first cost and proven performance), they're still flexible enough to be easily adapted to

meet almost any standard requirement.

Chances are that one of the C-E standard boilers is the answer to your steam needs. But whatever they may be, C-E can fill them. For C-E Boilers are made in sizes and types for any capacity—for any pressure—any fuel or method of firing.

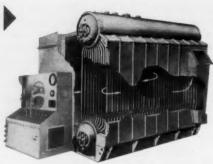


C-E Vertical Unit Boiler, Type VU-55

The VU-55 Boiler is available in six sizes ranging from 50,000 to 120,000 lb of steam per hr. It is designed for two pressure ranges—up to 250 psig and to 500 psig. These units are arranged for the application of superheater surface and heat recovery equipment if desired. VU-55 Boilers are designed for the pressure firing of oil or gaseous fuel and require no induced draft fan. They are equipped with tangential burners and tangent tube furnace walls to assure a level of performance which compares favorably with modern utility practice. The VU-55 Boiler is bottom supported requiring no supporting steel structure. The absence of exterior ductwork permits a smooth, streamlined exterior which is both attractive and practical.

C-E Package Boiler, Type VP

This completely shop-assembled boiler is available in fourteen sizes from 4,000 to 40,000 pounds of steam per hour . . . for operating pressures up to 500 psi . . . for pressure firing of liquid on gaseous fuels. The VP Boiler has more water-cooled area per cubic foot of furnace volume than any other boiler of its size and type. The large lower drum -30-inch dismeter – permits a simple, symmetrical tube arrangement . . . greater water storage capacity . . . easy access for washing down or inspection. A centrifugal fan, which operates at low speed and is exceptionally quiet in operation, is standard equipment. The simple baffle arrangement results in low draft loss . . . simple soot blowing . . . no dead pockets . . high heat absorption. The VP is enclosed in a reinforced gastight, welded steel casing, and shipped completely assembled with firing equipment, fittings and forced draft fan. For foundation, it needs only a simple concrete slab.



← C-E Vertical Unit Boiler, Type VU-10

The VU-10 is available in nine sizes from 10,000 to 60,000 pounds of steam per hour . . . for operating pressures up to 475 psi . . . superheat to 200° F in 20,000-60,000 lb range . . . for solid, liquid, or gaseous fuels. This boiler is a completely standardized design adaptable to many conditions. It is bottom-supported and needs no outside supporting steel. It operates efficiently over a wide range of output, and is easy to operate and to maintain. All parts are easily accessible for inspection. The VU-10 is a complete unit—boiler, furnace, setting, fuelburning equipment, controls, forced draft, heat recovery equipment (if desired). Regardless of fuel, the same general cross-sectional arrangement of drums, convection bank and furnace wall cooling is used. Uniform design through each transverse section assures even water level in the drum and uniform expansion.

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CANADA: COMBUSTION ENGINEERING-SUPERHEATER LTD.

STEAM GENERATING UNITS, NUCLEAR REACTORS; PAPER MILL EQUIPMENT, PULVERIZERS, FLASH DRYING SYSTEMS; PRESSURE VESSELS; DOMESTIC WATER HEATERS; SOIL PIPE



B-852



Photo courtesy of General Railway Signal Co.

What never stops "working on the railroad"?

Look at that signal. There's your answer.

Signals are always working to speed train movements and to increase railroading safety. Twenty-four hours a day, without interruption.

And — although storms or accidents may knock out the source of electrical power ordinarily supplied for its operation — there's little danger that a signal won't work.

If "line" power fails, a standby battery unit automatically takes over the load.

Many standby units are powered by nickel-iron-alkaline storage batteries developed by Thomas A. Edison. These batteries employ nickel active material and nickel flake in the positive element. No matter how often they get used they're always on the ready!

Nickel-iron-alkaline batteries don't deteriorate when idle. Don't freeze. And can't be damaged by the overcharging that usually occurs in this kind of service.

Their rugged steel cell containers as well as all structural parts of the cells are protected by an adequate deposit of nickel. To meet certain specialized requirements, the cell containers are sometimes made entirely of Monel®.

In general, nickel strengthens

and toughens other metals, and imparts to them added corrosion resistance.

If you have a problem in which corrosion or ability to withstand stresses or fatigue at normal, high or low temperatures are troublesome factors, let's talk it over. Two minds are better than one, and we may be able to help you find how nickel or a nickel alloy can solve a troublesome problem for you.

Write for... List A of available publications. It includes a simple form that makes it easy for you to outline your problem.

Nickel Alloys Perform Better, Longer



THE INTERNATIONAL NICKEL COMPANY, INC. \$7. Well \$5.70.95.

Railway Officers

Tredway, Shea Promoted In SP's New PR Set-Up

Jurisdiction over advertising and public relations matters in the new System Passenger Traffic-Public Relations De-



Claude E. Peterson



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J. G. Shea

partment of the Southern Pacific has

been assigned to Fred Q. Tredway.

Mr. Tredway, general advertising
manager of the SP since 1930, has been promoted to asistant to vicepresident in the new department, which

is headed by Vice-President Claude E. Peterson (Railway Age, August 29, page 43).

Other shifts in the SP public relations staff include the assignment of J. G. Shea as general public relations manager, with headquarters at San Francisco. Mr. Shea has been manager of public relations for SP's southern

district at Los Angeles.
Erle Heath, E. G. Fitzpatrick, and S. T. Moore have been named assistant general public relations managers.

A. L. Kohn, assistant general advertising manager, has been promoted to advertising manager. J. R. Lehmann becomes assistant advertising manager.

ATLANTIC COAST LINE.-D. B. Lacy, assistant superintendent motive power, Southern division, at Waycross, Ga., has been appointed superintendent motive power of that division.

H. W. Pinner, assistant to general superintendent transportation at Wilmington, N.C., has been named staff assistant, office of the president, at that

D. A. Lockfaw, assistant auditor passenger receipts, has been appointed auditor passenger receipts, at Wilmington, N.C., succeeding I. M. Craig, who retired August 31, after more than 48 years with the ACL. G. A. Hard-wick, chief clerk, office of auditor passenger receipts, at Wilmington, succeeds Mr. Lockfaw as assistant auditor passenger receipts.

GRAND TRUNK WESTERN.— Francis Arthur Gaffney, general manager, department of road transport, Canadian National, at Montreal, has been appointed vice-president and gen-



Francis Arthur Gafiney

eral manager of the GTW at Detroit, effective October 1, succeeding S. J. Massey, Jr., who has resigned to become general manager of the New Haven.

Mr. Gaffney was born at Brockville, Ont., May 6, 1904, and joined the operating department of the Grand Trunk (now CNR) there in 1920. He served in clerical and secretarial capacities until 1938, when he joined the bureau of economics (now the de-



NEW HAVEN .- Samuel J. Massey, Jr., has been appointed general manager at New Haven, Conn., including jurisdiction over the mechanical and en-gineering departments. Mr. Massey formerly was vice-president and gen-eral manager of the Grand Trunk Western at Detroit.

partment of research and development) at Montreal as a special assistant. Specializing in economic analysis, Mr. Gaffney became chief of transport research of the system in 1950 and was appointed general manager of the department of road transport when it was organized in 1953.

RUTLAND .- Ray I. Nova, general agent at Chicago, has been transferred to New York.

SAVANNAH & ATLANTA. — Russell D. Petersen has been appointed general western agent at Chicago, succeeding George E. Ehlert, resigned.

SEABOARD.-Fred Woods, diesel supervisor (system), who was temporarily transferred to Savannah, Ga., May 16, has been reassigned to Hialeah, Fla.

TEXAS & PACIFIC.-Y. B. Lolley, assistant general agent at Fort Worth, Tex., has been named to the newly created position of general merchandise traffic agent at Dallas.

WABASH.—Paul A. Spiegelberg, freight traffic manager at St. Louis, will retire October 1 after nearly 44 years of service.

OBITUARY

Raymond D. Maloney, superintendent of the Buffalo and Cleveland division of the Nickel Plate, died September 4 at Conneaut, Ohio.

Drennan J. Slater, 52, general solicitor for the Chicago & North Western at Chicago, deel September 7 when struck by a C&NW train at Evanston, Ill.











A railroad moves only as fast as its communications

Because a railroad can move no faster than its written or spoken words, the speed, efficiency and completeness of communications are all-important.

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To help solve those problems—at high efficiency and low cost—the Bell System provides a variety of services and facilities. And they are flexible so they can be adapted quickly as needs change.

Your Bell Telephone company will work with you in developing the most efficient application of services and facilities to meet your communications needs. Call your Bell Telephone representative today.

BELL TELEPHONE SYSTEM



TELEPHONE

TELETYPEWRITER

MOBILE RADIO

TELEMETERING AND REMOTE CONTROL CHANNELS

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted) MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1955

11 wa 110 w 119 m 118 6 6,573 35,214 430	278 278 288 60 60 60 60	281 6,915 16 397 2,413 19,333	415 90 1,612 703 2,753	-148 -148 51 451 451 386	428 321 2,253 1,667	93 3,478 25,655 343 1,988	37 198 268 2,112 15,660	329 2,344 141 1,028 1,095	1,760 10,431 —25 —855 411 2,763
Net rail 1955 \$36 6,993 42,130 877	36	634 6,815 79 343 3,551 24,259	-364 -364 277 1,705 920 3,766	3,373 74 702 702 356	478 237 3,104 473 2,816	531 5,483 38,808 348 2,237	90 489 876 1,653 1,985 13,160	347 2,428 142 1,131 437 6,470	11,197 11,197 —1,253 3,655
Railway tax accruals \$60 484 8.739 52,091 559	20 133 138 138 61	6,475 6,475 275 3,072 17,361	38 274 114 814 814 971 3,347	4,457 62 613 31 208	15 90 238 1,603 437 3,210	44 288 4,507 30,742 113 528	128 732 1,112 7,630 2,161 14,647	355 2,488 121 991 1,432 9,668	1,855 10,994 177 1,215 184 1,241
Net from railway perution \$124 1,031 116,529 96,529 1,322 1,322	26 140 35 159 10 257	599 C 16,258 120 646 8,114 51,150	-20 75 119 1,929 1,587 5,084	2,073 11,379 —31 164 —57 838	5,175 1,034 7,275	1,628 9,711 67,803 610 3,916	222 1,319 2,762 14,105 4,336 28,791	6,234 375 2,838 2,344 19,759	4,669 27,019 311 2,084 427 4,167
1954 1954 1954 173.7 77.6 74.6 44.9	84.2 86.0 90.1 100.5 81.5	98.1 80.2 80.0 82.8 81.7	115.9 100.9 117.6 72.1 53.0 74.5	85.5 85.8 143.3 1122.5 110.8	97.3 95.1 83.1 82.4 80.4 81.6	92.0 782.9 77.8 79.6 80.7	77.6 80.6 87.5 90.9 79.9	68.6 68.6 777.5 78.2 88.5 88.5	711.7 75.6 83.2 88.0 68.9 65.6
Operating 1955 ratio 195 74.0 816 70.2 811 70.8 74 46.4 46	91.2 91.9 88.5 91.4 90.6 73.9	94.7 82.9 78.0 78.8 78.8	109.4 95.6 86.3 76.8 46.5 63.7	72.0 76.8 123.9 84.8 116.5	97.1 99.8 86.8 79.3 778.1	81.1 74.8 68.2 67.6 79.0 80.0	64.0 70.1 83.7 87.2 79.3	68.8 67.9 77.5 77.5 87.8 85.3	72.7 75.4 88.3 88.6 71.5 59.9
Total 1954 \$340 2,377 35,705 35,705 985	255 1,914 280 2,001 769	10,605 74,444 459 3,158 26,489 179,942	235 1,636 792 6,378 1,290 9,450	5,559 40,864 1,065 3,183	207 1,473 2,619 19,032 3,559 26,327	797 5,223 18,029 133,177 2,099 15,123	3,459 14,348 95,837 16,793	1,852 12,809 1,292 9,241 16,987	12,372 83,349 2,352 16,034 1,001 7,608
Total 1955 8353 2,431 36,048 34,242 1,105	267 1,596 268 1,691 728	10,766 78,631 426 2,967 30,228 190,401	238 1,648 747 6,374 1,380 8,905	5,324 37,689 1159 910 3,596	222 1,583 2,912 19,842 3,698 25,483	758 4.830 20.784 141,166 2.296 15,616	3,100 14,189 96,355 16,633	1,965 13,187 1,414 9,754 16,912 114,734	12,424 82,620 2,341 16,171 1,073 6,222
Trans- portation \$146 972 16,346 05,654 245	132 743 128 724 46 329	4,926 34,757 158 1,043 14,756 97,113	133 920 2,227 488 2,868	3,150 21,076 24 159 178 1,829	125 870 1,331 9,310 2,025 13,680	371 2,466 9,956 66,977 1,120 7,513	1,256 7,576 50,178 7,993 54,097	083 5,955 684 4,504 7,733 52,848	6,019 40,432 1,308 9,051 386 2,186
836 277 1,204 8,412 1	99 117 100 69	397 2,811 19 132 841 6,048	112 148 31 190	824 824 .:	51 160 1,131 68 494	17 121 680 4,802 130 941	225 325 2,677 514 3,606	110 780 95 667 667 496 3,388	488 ,362 62 469 73 338
Sxpenses pment Deprec. and Aretire- ments 97 1,978 11,978 13,669	125 125 34	598 4,186 42 297 1,013 7,089	102 102 652 140 979	1,417 22 156 17 122	150 1,012 1,012 178 1,251	11 79 1,494 10,535 133 932	23 162 854 5,873 840 5,721	121 845 73 511 901 6,244	575 4,010 81 589 95 648
Total 1954 860 445 8675 8675 8675 8575 8575 8575 8575 857	377 61 443 15 80	2,736 18,633 106 717 6,511 43,763	23 182 246 1,600 487 4,234	826 7,137 98 730 88 769	27 205 507 3,770 758 5,943	4,443 4,443 34,712 3,160	139 978 20,016 3,589 24,348	2,896 2,896 1,810 3,341 28,513	2,566 18,498 353 2,785 250 2,137
Potal Total Total 1955 19 858 81879 8,61,369 59,202	364 121 131 131 131	2,429 20,336 101 748 8,228 46,629	23 172 197 1,648 588 3,931	840 6,353 97 561 100 865	33 238 610 4,132 787 5,734	108 735 5,218 35,805 481 3,354	90 821 20,071 3,310 23,535	2,885 264 1,881 3,396 27,003	2,516 18,114 345 2,765 280 1,844
Structures and sand Retirements 86 42 664 4551 6	956446	183 1,180 5 63 559 3,454	15 76 21 121 18 125	1,015 1,015 6 5 38	68 68 40 339 168 821	116 399 3,072 50 239	10 328 323 2,339 374 2,767	43 329 21 134 396 2,784	234 1,652 39 311 24 145
Maint, Way and Total Total 1954 868 869 867 7,716 7,116 45,316 22 22 259 170	306 306 48 367 20 20 208	2,322 14,788 156 1,048 3,805 25,696	48 336 200 1,900 1,456	1,286 9,074 20 136 83 687	43 3,622 576 4,443	264 1,473 3,178 25,043 2,432 2,432	110 497 2,650 17,055 3,801 19,912	400 2,729 221 1,765 4,068 23,498	2,521 14,674 479 2,895 288 2,163
Maint.) Total 1955 868 7,428 44,117 22 259	39 264 40 301 23 190	2,423 16,465 134 947 4,659 28,432	48 307 200 1,900 1,195	7,039 7,039 140 96 736	47 365 610 3,926 666 4,204	228 1,246 3,667 24,801 2,552	2,591 17,397 3,931 21,244	451 3,015 268 1,928 4,205 24,380	2,552 14,784 494 2,986 272 1,553
(inc. misc. 2,910 48,466 (07,648 205,199 2,199 2,199 2,199 2,199	2,226 311 2,453 97	10,808 92,844 464 3,945 31,999 220,238	203 1,621 674 8,851 2,434 12,679	6,506 47,648 101 870 329 4,011	213 1,549 3,151 23,096 4,424 32,282	867 6,297 23,080 171,263 2,636 18,749	699 4,291 16,405 105,446 21,031 142,738	2,698 18,663 1,667 11,809 19,203	17,257 110,295 2,827 18,218 1,452 11,598
Fevenus Total 1955 8478 3,463 3,463 30,771 320,277 2,427	1,736 303 1,850 109 985	11,365 94,889 545 3,613 38,342 241,551	218 1,723 866 8,303 2,968 13,989	7,397 49,068 128 1,074 343 4,434	229 1,587 3,354 25,016 4,732 32,758	935 6,458 30,495 2,907 19,532	616 4,419 16,951 110,460 137,252	2,856 19,421 1,790 12,592 19,256 134,493	17,093 109,639 2,652 18,255 1,500 10,388
Operating Pass \$4,473 23,751	37 169 35 160	1,403 10,688 1,675 11,180	393 393 203 503	5,849 5,849 320	9 85 193 1,085 493 3,184	80 428 690 4,418 295 1,304	2,311 12,537 1,951 10,747	46 86 59 1,309 7,354	1,570 9,917 172 987
Freight \$467 3,397 43,880 278,271 2,377	208 1,242 236 1,460 106 968	9,083 76,683 536 3,531 34,102 213,916	163 1,311 798 7,825 2,901 13,784	5,599 37,916 128 1,074 250 3,907	192 1,363 2,914 21,930 3,922 27,210	785 5,548 27,861 193,945 2,368 16,535	4,308 12,966 85,745 16,773	2,667 18,232 1,583 11,161 15,832 113,031	14,009 89,740 2,259 15,865 1,489 10,327
Average mileage operated during period 171 171 171 171 171 171 171 171 171 17	93 133 205 205 205	5,288 5,328 343 6,178 6,181	602 602 208 208 208	1,576 1,576 35 35 234 234	90 1,764 1,764 613	5,111 5,111 5,114 868 868	130 7,873 7,873 8,807 8,836	1,470 1,470 541 541 10,641	7,920 7,921 1,616 1,616 304 304
Name of Road Akron, Canton & YoungstownJuly Atchinon, Topeka & Santa FeJuly Atlanta & St. Andrews BayJuly	Atlanta & West PointJuly Western of AlabamaJuly Atlantic & DanvilleJuly T.mos	Atlantic Coast LineJuly Charleston & Western CarolinaJuly Baltimore & OhioJuly	Staten Island Rapid TransitJuly Bangor & ArostookJuly Trans. Bessemer & Lake EricJuly	Boston & MaineJuly Cambria & IndianaJuly 7 mos. Canadian Pacific Lines in MaineJuly 7 mos.	Canadian Pacific Lines in Vermont July 7 mos. Central of Georgia July 7 mos. Central of New Jersey July 7 mos.	Central Vermont. July Chesapeake & Ohio. 7 mos. Chicago & Eastern Illinois. July 7 mos.	Chicago & Hilnois MidhandJuly Chicago & North WesternTones. Chicago, Burlington & QuincyJuly T mes.	Chicago Great WesternJuly Chicago, Indianapolis & LouisvilleJuly Chicago, Milw., St. Paul & PacifoJuly Tmos.	Chicago, Rock Island & PacificJuly Chicago, St. Paul, Minn. & OmahaJuly ClinchifieldJuly 7 mos.





Johns-Manville

97 YEARS OF SERVICE TO TRANSPORTATION

REVENUES AND EXPENSES OF RAILWAYS (Dollar figures are stated in thousands; i.e., with last three digits omitted) MONTH OF JULY AND SEVEN MONTH OF CALENDAR YEAR 1955

Operating Expenses

	Average					Maint.	Way and	Structure	Mai	rating Ex nt. Equip	penses -				1						
			Operating Pass.	Revenue Total (ine. misc.) 1954	Total 1955	Total F	and lettire-	Potal 1955	Total I	and and Retire- ments 1	Fraffic p	Trans-	Total 1955	Total 1954	Operating ratio	1-	from R railway	Railway tax o	Net railway perating incol	ay noom 1954
Colorado & Southern	719 721 1,037 1,037 40	1,119 7,382 1,416 10,314 185 1,285	85 454 186 966	1,329 8,695 1,739 12,303 2,066	1,212 7,791 2,060 12,740 237 1,413	1,222 2,431 2,555 2,431 255	1,091 233 1,959 100 100	105 255 245 1	167 1,155 230 1,821 32 227	229 1,590 274 1,922 186	290 290 40 303 11 78	217 63 63 10	3,160 681 4,441 105 741	1,016 6,193 1,335 9,837 1,323	995 6,277 1,317 9,301 165 986	76.4 71.2 76.7 80.0 60.0	82.1 80.6 63.9 69.4		1,251 97 537 65 415	1,008 1,008 319	96 672 347 1,629 201
Columbus & Greenville July Delaware & Hudson July Delaware, Lackawanna & Western July T mos.	168 168 792 792 962 962	129 997 3,757 27,672 5,295 37,585	1,052 815 815 5,443	1,035 4,085 29,636 6,703 47,377	123 1,081 3,698 27,669 6,212 45,362	31 3,556 3,556 5,536	33 209 529 4,012 793 5,588	4 26 67 362 136 1,081	24 181 685 5,202 1,029 7,167	26 181 736 5,488 1,014 7,734	6 44 173 1,258 324 2,265	605 179 179 1,279	50 340 1,503 10,294 3,137 21,953	134 912 912 21,178 5,474 37,967	127 877 3,057 22,267 5,279 37,806	99.9 88.1 69.9 71.5 81.7	103.6 81.1 82.7 85.0 83.3	1.228 1.228 8,458 1,229 9,410	111 3,041 611 4,220	21 21 5,334 605 4,306	327 3,013 428 3,649
Denver & Rio Grande Western July Detroit & Mackinae Jine Tonos Detroit & Toledo Shore Line Tonos 7 mos.	2,165 2,165 232 232 50 50	5,412 39,529 1,227 548 4,575	1,648	5,941 42,550 191 1,253 596 4,917	5,676 40,116 172 1,107 536 4,533	245 245 93 577	784 5,815 40 280 83 83 556	469 188 188 188 188 188 188 188 188 188 18	877 6,508 27 200 63 459	898 6,538 160 59 413	278 1,975 65 21 140	1,340 1,340 26 17 121	1,874 12,594 43 276 190 1,421	4,090 27,546 122 839 377 2,678	4,043 27,831 119 809 355 2,518	68.8 64.2 66.9 64.2 54.5	71.2 69.4 73.1 66.3 55.5	1,851 15,004 68 414 2,239	771 7,190 37 268 62 722	7,821 34 171 56 620	7,325 147 565 565
Detroit, Toledo & IrontonJuly Duluth, Missabe & Iron RangeJuly Duluth, South Shore & AtlanticJuly T mos.	464 464 555 553 553	1,686 11,686 6,527 22,151 680 4,179	= 4 8 4	12,073 7,570 25,749 4,426	1,284 10,661 6,592 22,592 625 4,018	297 1,848 412 2,629 143 930	1,894 493 3,732 151 896	170 62 436 10	340 1,785 574 3,814 109 914	1,868 612 612 5,276 117 894	90 645 110 769 161	37 285 9 69 28 197	2,992 1,705 7,467 221 1,412	1,219 7,360 2,836 14,994 3,606	1,045 7,554 2,830 17,441 537 3,526	69.7 61.0 37.5 58.2 72.6 81.5	81.4 70.9 77.2 85.9 87.8	4,712 4,735 10,755 197 820	2,177 2,672 5,755 5,755	2,701 2,043 4,854 138 473	1,785 2,437 2,362 53
Duluth, Winnipeg & Pacific. July Elgin, Joliet & Eastern 7 mos. Frie. 7 mos. 7 mos.	175 175 236 236 2,224 2,224	478 3,315 3,152 23,160 11,401 79,964	680	486 3,360 3,925 28,450 13,212 90,859	3,159 3,312 25,797 12,184 88,487	70 441 253 1,642 1,956 11,267	96 536 206 1,767 2,265 12,486	30 25 197 217 1,892	63 474 545 3,723 2,073 14,647	53 456 409 11,342 2,016 14,458	15 106 711 512 3,576	41 33 229 353 2,493	216 1,497 1,444 9,893 5,819 39,301	363 2,509 2,450 16,693 72,293	2,548 2,097 24,403 110,953	74.7 74.7 62.4 58.7 81.7	69.8 63.3 94.6 89.9 81.3	123 852 1,475 11,757 2,414 18,566	263 263 651 5,604 774 6,343	14 75 75 4,027 857 7,674	56 -1,676 880 7,454
Florida East Coast. July Georgia Railroad 7 mos. Georgia & Florida. 7 mos. 7 mos.	321 3321 332 332 332	1,411 16,030 582 3,244 322 1,910	3,696 29 103	1,923 21,634 674 3,744 326 1,942	1,824 20,244 661 4,833 277 2,034	251 102 699 86 530	2,810 104 877 161 701	311 10 66 27	3,609 125 769 30 212	3,437 136 914 30 269	686 686 233 88 85 85	537 33 223 19 126	894 7,659 300 1,693 86 547	1,673 15,671 596 3,597 237 1,523	2,144 15,685 612 4,378 313 1,865	87.0 72.4 88.4 96.1 72.6 78.4	117.5 77.5 92.5 90.6 112.9 91.7	5,964 5,964 147 89 419	Cr. 31 1,518 37 219 15 99	2,832 2,832 185 40 156	1,767 1,767 451 451
Grand Trunk Western July Can. Natl. Lines in New England July Great Northern July 7 mos.	952 952 172 172 8,283 8,287	4,371 31,610 130 1,159 20,973 127,045	291 1,558 20 50 1,158 6,218	5,039 35,882 160 1,368 24,147 143,818	4,554 33,923 171 1,297 23,920 136,993	4,040 72 428 4,822 28,640	4,913 78 505 4,534 27,333	399 9 66 338 2,520	706 5,180 18 164 3,327 23,313	754 5,938 24 231 3,384 25,816	95 664 730 5,006	85 581 2 19 479 3,055	2,315 15,656 127 829 7,553 48,144	3,951 26,837 229 1,537 17,077	3,947 27,871 266 1,805 16,449 09,393	78.4 74.8 143.4 112.4 70.7 75.9	86.7 82.2 155.8 139.2 68.8 79.9	1,088 9,045 69 169 7,071	322 2,200 24 169 3,583 18,064	3,696 -153 -763 3,115	1,308 1,308 -1,064 3,142 9,773
Green Bay & WesternJuly Gulf, Mobile & OhioJuly Illinois CentralTemporalJuly 7 mos.	224 2,757 2,757 6,531 6,536	2,526 5,924 42,844 19,541 136,760	365 2,330 1,900 12,590	366 2,579 6,727 48,258 23,993 166,113	2,524 6,589 47,510 22,393 158,952	95 456 1,071 7,350 3,961 24,736	109 591 1,018 6,978 3,699 24,957	28 73 583 401 2,955	264 1,248 9,030 3,453 27,279	306 1,283 9,327 3,538 28,348	283 283 1,976 5,448	22 154 279 1,874 527 3,774	105 738 2,066 14,340 8,135 58,027	278 1,731 5,010 35,012 17,106	296 1,910 5,026 35,650 17,173 23,912	76.1 67.6 74.5 72.6 71.3	77.2 75.8 76.3 75.0 76.7	848 1,717 13,246 6,887 45,117	44 422 734 4,986 3,405 23,792	244 244 688 5,816 2,967 17,456	17 161 651 4,855 1,981
Hinois Terminal July Kansas Gity Southern Tomes Kansas, Oklahoma & Gulf Tomes Tomes Tomes	355 355 891 891 327	848 5,600 3,352 22,932 421 2,806	37 296 110 720	1,002 6,651 3,805 25,882 425 425 2,818	931 6,183 3,423 24,232 443 2,992	165 944 369 2,489 46 394	147 980 319 2,407 70	27 172 42 288 7 55	1,121 524 3,177 25 203	157 1,081 370 2,697 256	290 297 297 297 297 297	310 920 620 27 196	366 2,567 1,109 7,437 104 729	804 5,349 2,217 14,597 1,662	785 5,381 1,964 14,009 270 1,843	80.3 80.4 56.3 56.4 59.0	84.4 87.0 57.4 57.8 61.0	1,302 1,588 11,285 11,285 1,156	580 580 736 5,132 91 506	61 463 4,653 84 424	51 321 647 4,369 67 438
Lake Superior & Ishpeming July Lehigh & Hudson River 7 mos. Lehigh & New England 7 mos. 7 mos.	149 149 96 96 178	2,127 2,63 1,887 639 4,272	::::::	2,707 2,707 264 1,889 646 6,311	536 1,832 261 1,894 552 3,849	374 374 242 62 514	420 37 278 91 557	10 67 16 7 61	53 431 27 204 180 1,152	432 30 30 129 985	114 114 59 84 10 10 10 10 10 10 10 10 10 10 10 10 10	16 105 177 121	143 597 93 610 204 1,361	278 1,503 178 1,247 504 3,434	230 1,438 178 1,290 473 3,268	31.6 55.5 67.3 66.0 78.0	42.9 79.0 68.1 85.7 84.9	594 1,204 87 642 142 878	280 657 37 259 130 765	356 698 28 211 299 597	226 243 243 195 195 565
Lohigh Valley July Long Island 7 mos. 7 mos. 7 mos.	1,154 1,154 360 360	5,067 35,038 1,117 7,731	293 1,968 4,099 25,691	5,627 39,027 5,463 35,184	5,412 37,339 4,906 31,327	834 5,088 663 4,646	5,681 593 4,700	135 727 86 602	951 6,811 978 6,663	882 6,240 958 6,545	209 1,445 130 879	140 975 20 138	2,550 16,849 2,466 17,120	4,710 31,434 4,292 29,812	4,579 30,998 4,192 29,426	83.7 80.5 78.6 84.7	84.6 83.0 85.4 93.9	7,593 1,171 5,372	429 1,216 311 2,153	393 5,380 542 1,122	329 2,610 68 2,657

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

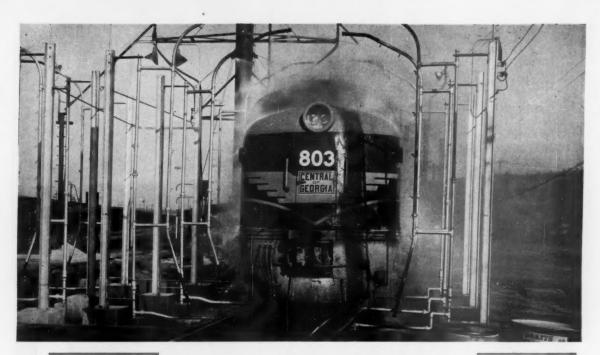
MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1955

7ay ncome 1954 3,064 1,235 12,918 1,150	121 121 966 667 382	17 96 151 537 708 4,034	2,788 11,875 140 1,441 523 3,372	162 30 324 293 2,633	2,381 5,348 4,600 1,425 9,492	1,223 3,480 5 491 -136	124 1,406 10,435 27 297	2,490 4,551 113 316 316	5,443 22,517 —2,177
Net raily perating i 1955 3.496 2,308 14,227 1,325	26 150 175 876 566 1,420	20 140 108 849 612 3,861	3,313 16,201 331 1,954 340 3,746	282 260 239 239 913	5,419 40,630 1,129 7,444 1,718 11,795	1,009 7,367 -48 537 -202 -1,082	280 3,122 18,879 403	1,726 9,934 -258 421 10 79	6,401 44,388 —220 —2,047
	30 236 1,331 1,656	134 79 610 534 3.213	1,310 7,840 124 827 306 1,374	23 185 27 131 157 688	5,338 35,229 860 4,762 1,969 13,371	753 4,648 92 578 38 264	354 3,944 23,631 611	2,036 11,961 Cr. 206 887 19	5,078 34,421 63 435
1,072 1,072 7,190 3,057 17,314 3,349 3,349	72 488 410 2,120 1,034 3,032	48 351 178 1,400 1,619 9,817	5,241 28,425 536 3,431 881 6,804	1,250 1,250 14 76 433 1,860	12,648 90,298 965 5,501 4,134 28,060	3,183 19,011 40 1,182 —82 —276	51 1,011 6,033 35,870 134 1.281	3,491 19,714 2,433 44 276	14,678 97,666 25 —578
8-9500	65.4 69.6 83.9 80.9 75.9	79.4 82.4 59.6 68.0 73.7 77.8	75.7 80.6 89.4 85.7 78.8	71.6 64.5 133.5 91.8 80.4 74.8	83.6 87.5 105.4 98.0 70.3	77.1 81.3 71.2 55.3 104.1	81.9 77.8 80.1 79.0 86.0	77.8 88.6 64.8 72.2 69.8 44.6	82.5 85.1 104.9 110.2
Operati 1955 54.9 54.8 81.3 81.0 83.8	62.6 63.2 76.2 81.6 73.5 86.0	74.9 75.1 62.0 57.8 75.5 76.8	73.8 77.6 81.4 74.2 72.3	62.6 62.5 89.0 91.8 84.1 87.6	79.9 79.0 72.9 76.8 69.3 68.9	77.8 79.1 86.6 55.1 119.1 108.5	87.2 71.6 65.4 68.7 82.3 77.9	77.5 80.3 144.4 70.0 49.0 50.9	81.6 81.5 97.3 111.1
Total 1954 1,286 9,047 13,294 95,334 1,735	114 818 1,354 9,398 2,982 19,262	1,143 2,58 2,013 4,697 33,294	14,079 98,641 2,297 15,890 2,617 18,292	302 2,109 112 921 2,150 15,756	46,793 360,193 2,621 19,302 8,799 59,258	9,698 71,369 1,360 514 3,632	358 2,575 10,361 74,885 661 4,634	11,574 82,827 813 5,535 47 347	59,338 421,790 988 5,878
Total 1955 1,304 8,708 13,331 73,975 1,594 11,215	121 839 1,314 9,374 2,861 18,617	143 1,066 291 1,920 4,999 32,530	14,773 98,596 2,350 16,045 2,542 17,819	2,086 114 842 2,282 13,192	50,149 340,577 2,598 18,247 9,347 62,101	11,174 71,802 258 1,452 511 3,519	350 2,549 11,383 78,601 623 4,522	12,032 80,594 933 5,679 286	65,123 428,915 890 5,798
Trans- oortation 619 4,206 6,283 33,000 736 5,193	355 372 3,979 1,255 8,029	343 124 124 823 2,505 16,425	6,865 45,784 1,128 7,561 1,170 8,067	154 1,174 50 365 1,145 6,257	27,262 1,033 7,700 4,918 31,939	6,722 40,478 99 650 246 1,744	1,461 4,869 33,104 233 1,715	5,986 40,322 274 2,356 17 121	35,001 230,936 554 3,268
Traffic p 70 499 372 2,506 140	36 702 702 887	14 100 11 79 1,738	470 3,377 66 447 92 668	1 1 7 117 796	1,169 7,680 64 691 891 2,331	279 1,725 25 172	2,348 2,348 324 324	372 2,606 41 41	1,216 8,542 15 79
April and a ments 92 637 812 5.818 5.45	26 76 533 124 851	41 31 205 241 1,700	815 122 122 855 113 798	14 95 16 117 139 971	2,266 15,832 283 1,994 2,522	2,791	13 90 688 4,800 29 196	3,664	20,450 20,450 153
Total 1954 266 1,858 3,590 26,313 2,779	11 78 275 1,879 615 4,408	25 190 63 559 927 6,557	3,156 22,460 482 3,309 507 3,601	74 431 43 362 382 2,846	9,593 82,030 792 6,574 1,958 13,809	1,836 13,206 21 136 83 622	2,930 2,930 21,772 126 854	2,573 19,530 101 677	17,068 109,717 110 722
Total 1955 285 1,857 3,574 20,634 2,369	10 252 1,934 629 4,198	25 186 77 529 1,028 6,258	3,506 24,624 453 3,368 497 3,447	54 389 41 304 403 2,668	10,561 72,389 904 5,779 2,138 14,523	1,793 13,047 22 144 87 616	56 417 3,485 23,868 121 869	2,527 18,031 107 723 2	17,325 109,910 110 777
and Retire- ments 138 237 1,680 191	41 27 195 45 391	16 6 39 103 651	2,171 35 280 48 324	113 113 17 17 50 322	1,288 7,174 51 272 142 992	262 1,862 25 177 177 153	38 306 2,190 15 93	347 1,951 171 194 171	1,390 9,726 25 202
Total 1954 243 1,942 2,539 19,810 477 3,068	33 272 296 1,976 759 4,807	55 431 67 526 807 6,235	3,037 21,020 494 3,530 685 4,829	62 447 12 106 435 3,415	8,031 58,930 432 2,953 1,415 9,608	1,429 12,377 90 621 129 855	48 2,239 15,330 1,254	2,058 16,045 289 2,165 18	6,035 57,718 217 1,378
Total 1955 1,589 2,432 13,217 420 2,890	40 285 268 1,974 741 4,850	364 68 68 410 908 5,937	3,268 20,221 584 3,824 635 4,598	63 432 13 101 503 2,679	8,541 51,022 401 2,814 1,473 10,195	1,507 10,448 133 633 122 774	376 2,075 15,047 179 1,244	2,350 14,292 524 2,403 117	8,958 56,892 184 1,417
inc. misc. 1954 1,955 15,043 14,510 114,146 1,789 14,831	1,175 1,176 1,615 11,615 3,928 21,166	1,387 432 2,959 6,374 42,769	18,604 2,569 18,532 3,317 24,304	422 3,268 84 1,003 2,675 21,065	55,969 411,616 2,487 19,690 12,520 82,813	12,572 87,787 2,458 494 3,521	437 3,310 12,929 94,824 769 5,618	14,871 93,478 1,255 7,666 67	71,961 495,749 942 5,333
Revenue Total (1955 2,376 15,897 16,388 91,289 1,902 14,564	1,327 1,725 11,494 3,895 21,649	1,417 469 3,319 6,618 42,347	20,014 127,021 2,886 19,476 3,423 24,624	3,336 128 918 2,715 15,051	62,796 430,874 3,564 23,749 13,481 90,161	14,357 90,812 2,634 429 3,243	401 3,560 17,416 114,471 757 5,803	15,523 100,308 646 8,112 86 562	79,801 526,581 914 5,220
Dperating Pass. 57 362 1,026 4,354 134 683	24 159 572	276	955 5,454 163 1,004 103 573	140	8,682 57,855 451 171 1,012	4,314	38 306 375 2,176	4,291	10,375 70,817 335 976
Freight 2,218 14,867 14,301 80,653 1,629 12,959	1,305 1,660 11,028 3,537 19,930	1,385 1,385 466 3,302 5,825 37,029	17,294 109,563 2,496 16,895 3,087 22,504	439 3,318 125 856 2,307 12,715	46,366 323,164 3,315 22,116 12,894 86,331	8,608 52,796 2,458 422 3,179	339 3,093 16,146 107,035 742 5,711	13,556 88,707 627 7,921 85 85	62,124 403,810 555 4,106
during period 753 4,733 4,733 944 944	334 334 1,397 3,224 3,224	148 172 172 3,241 3,241	6,917 6,918 1,104 1,723 1,723	1777 1777 51 51 1,043 1,043	10,710 10,710 221 221 2,178 2,178	1,769 1,769 21 21 541 541	120 2,126 2,136 604 605	6,866 6,866 329 330 132 132	10,037 10,037 358 358
July 7 mos. 7 mos. 7 mos. 7 mos. 9 July 7 mos.	itdand Valley	fississippi CentralJuly fissouri-IllinoisJuly fissouri-Kansas-Texas LinesJuly 7 mos	fissouri Pacific July International-Great Northern July Call Coast Lines Tool	Conongabela July Contour Tonos Contour Tonos Contour Tonos Constructor Tonos Contour T		few York, New Haven & HarfordJuly New York ConnectingJuly 7 mos. iew York, Ontario & WesternJuly 7 mos.	fow York, Susquehanna & Western. July 7 mos.	forthern Pacific	Pennsylvania. Pennsylvania-Reading Seashore Lines July 7 mos. 7 mos.
	Operating Properties Prop	Properties Pro	Operating Properties Prop	during during during from the control of th	dering Activity Coperating Floating	Particle Particle	Properties Pro	Column C	Company Comp

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; s.e., with last three digits omitted)
MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1955
MALL W. W. A. S. C. Operating Expenses

	Average					Maint.	Way and	Structure Jeprec.	N W	laint. Equ	nipment eprec.						_				
Name of Road	operated during period	Freight	Operating Page.	2	(inc. misc.) Total	_		_	_		0	- uo			Operation ratio	Fra ra	from Railway	Railway tax ope accruals	00 00	way noome 1954
Pittaburgh & Shawmut 7 mos. Pittaburgh & West Virginia 7 mos. Reading 7 mos. T mos. T mos.		148 1,039 720 4,697 8,014 58,341		1,048 1,048 4,723 9,046 66,500	1,116 1,719 4,197 8,140 63,054	20 176 117 743 1,423 8,455	28 227 102 677 1,101 1,7801	31 24 167 167 1,384 1284	252 136 136 863 1,777 1	59 310 125 1,712 2,216		31 59 427 151 151 2		94 782 536 3,541 3,7431 61,518 56	137 915 496 7 3,394 7 6,924 8	63.4 74.6 8 74.1 8 75.0 82.1 8	6 82.0 82.0 1 85.7 0 80.9 1 85.1 5 79.3			94 537 111 709 1,039	16 381 41 538 889 889 7,568
Richmond, Fredericksburg & Potomac July Rutland. 7 mes. 7 mes. 8 scramento Northern 7 mes. July 7 mes. 1 mes. 7 mes. 2 mes. 7 me	118 118 392 392 267 267	1,479 10,639 2,469 1,307	3,461		2,143 15,882 347 2,605 211 1,390	2,020 76 530 48 402	2,093 2,093 527 62 528	173 27 77 31 31 31		2,329 2,351 45 396 19 96	67 466 14 94 22	155 155 26 183 16	733 5,178 1,018 68 460	1,479 10,561 10,323 2,279 2,141 1,069 1		400448 8000666		801 5,552 64 416 49 296			260 1,870 112 123 60
St. Louis-San FranciscoJuly St. Louis-San Francisco & TexasJuly St. Louis Southwestern LinesJuly 7 mos.	4,610 4,603 157 157 1,561 1,561	8,556 62,576 364 2,655 5,550 36,739	2,748 26 26 22 127	9,721 70,462 385 2,831 5,740 38,064	9,439 67,506 364 2,714 4,784 34,547	1,493 10,284 67 382 740 4,498	1,459 10,920 44 305 641 4,983	168 1,199 1, 24 63 452	1,834 2,103 32 223 595 4,050	1,660 1,489 33 232 573 4,478	3,688 1 8 108 743	357 30 30 187 169 1,231	3,763 25,664 1,099 1,652 11,209	7,946 54,354 5,354 1,969 3,315 22,176	7,818 54,992 265 1,868 3,208	81.7 77.1 777.5 669.6 557.8	82.8 81.5 72.7 68.8 67.1 65.9	1,775 16,108 87 862 2,425 15,888	952 8,043 17 1,227 7,883	981 7,985 194 868 5,989	880 5,573 20 219 653 2,956
Seaboard Air Line . July Southern Railway . July Alabama Great Southern . July 7 mos 7 mos.	4,064 4,064 6,289 6,289 326 326	8,951 75,551 18,127 139,500 1,525 10,942	1,211 7,622 1,432 8,884 1,83 477	10,959 90,217 20,949 59,815 1,669 12,283	10,871 90,099 19,425 41,347 1,375 10,069	1,477 13,790 2,912 19,787 228 1,640	1,537 13,887 2,889 20,509 1,552	179 288 1,747 21,747	2,175 16,200 16,200 16,200 2,772 26,673 2,110	2,152 16,009 3,528 26,524 1,946	552 3,815 784 5,372 58 408	2,561 2 396 2,807 4 255	3,867 29,004 6,709 148,009 3,466	8,410 65,189 61,4753 103,871 1,117 8,071	8,334 65,420 11,568 03,163 1,044 7,315	76.7 72.3 70.4 65.0 66.9	76.7 72.6 75.0 73.0 5.75.9	2,549 25,028 6,196 55,944 2,552 4,212	9,068 1 2,877 2 25,617 2 1,762	1,705 14,019 3,237 25,665 1,930	1,589 13,406 22,333 17,773 166 1,371
Cinn., New Orleans & Texas Pacific July Georgia Southern & Florida July New Orleans & Northeastern July	337 475 475 204 204	3,251 26,327 5,299 5,880 6,880	1,240 57 512 53 342	3,600 29,031 811 6,341 1,089 7,671	3,297 24,680 695 5,666 1,039 7,061	565 3,796 234 1,804 1,164	488 3,384 1,343 1,343 1,437	57 358 9 64 19 132	616 4,466 80 548 130 961	543 4,206 61 467 137 972	140 944 8 51 42 296	92 545 130 20 149	880 6,601 1 246 2,028 220 1,566	2,330 16,479 1,814 4,814 4,245	2,123 15,381 4,114 575 4,555	564.7 735.8 554.0 554.0	64.4 62.3 81.8 72.6 55.4 64.5	1,270 12,552 1,526 1,526 3,494 3,426		5,715 5,715 20 173 1,285	4,072 4,072 104 198
Southern Pacific. July Texas & New Orleans. 7 mos. Spokane International. 7 mos.	8,127 8,129 4,315 4,315 150 150	39,982 266,288 10,015 70,754 303 1,985	3,215 18,924 543 3,216	46,309 304,254 11,235 78,694 315 2,072	43,466 284,139 10,253 73,902 1,895	5,986 37,026 2,313 13,929 13,929 336	5,193 34,703 2,226 13,348 60 387	486 3,358 1,013 17	9,572 62,363 1,716 10,541 191	9,341 60,587 1,475 10,492 176	1,984 13,441 138 1,003 10 67	883 6,206 1,904 1,904 41	18,961 3 117,251 23 4,040 26,989 5 78 490	37,526 3 236,790 22 8,962 57,303 5 1,144	35,684 229,487 8,734 57,689 1,183	81.0 77.8 72.8 55.3 55.2	82.1 80.8 85.2 78.1 61.3	8,783 667,463 2,274 21,391 141 928	2,753 28,908 730 8,462 41 331	3,627 30,303 430 5,414 65 412	2,980 21,806 3,549 64 350
Spokane, Portland & SeattleJuly Teamessee CentralTeme 7 mos. Texas & NorthernJuly 7 mos.	947 945 286 286 8	2,456 16,703 352 2,865 144 933	111 558 4 13	2,723 18,312 373 2,959 146 973	2,408 16,341 382 2,581 69 509	370 2,640 58 496 29	2,398 2,398 534 28	337	2,673 2,673 50 421 13	420 2,644 57 408 7 58	108 759 21 140 3	32 212 15 105 8	6,071 1 131 963 7 49	1,786 12,318 2,161 192	1,668 11,610 300 2,072 185	65.6 67.3 74.6 20.6 19.7	69.3 71.0 78.7 80.3 32.4 36.4	937 5,995 95 798 116	2,260 2,260 178 10	459 3,144 36 249 95 616	433 2,766 102 31 195
Terna & Pacific July Terna Merionn 7 mos. Toledo, Peoria & Western 7 mos. Toledo, Peoria & Western 7 mos.	1,831 1,831 161 161 239 239	5,666 40,306 223 1,691 569 3,983	2,272	6,641 46,254 241 1,823 583 4,043	6,229 45,379 1,577 521 4,082	1,049 7,123 46 330 103 592	7,391 61 372 83 669	96 660 35 77 477	1,108 7,030 31 206 56 395	1,169 7,607 28 195 62 403	252 1,746 10 69 111 80	1,335 1,335 10 68 49 323	2,264 15,314 62 457 139 965	4,946 33,211 168 1,188 387 2,579	4,905 34,077 1,204 357 2,574	74.5 71.8 69.7 65.2 63.8	78.8 75.1 125.5 76.4 68.5 63.1	1,695 13,042 73 635 196 1,464	4,648 34 268 80 604	815 17 185 53 434	4,749 -28 82 38 468
Union Pacifio July Usah Tmos. Virginian July Tmos. July Tmos. July	9,813 9,813 99 99 611	35,943 242,750 68 630 3,020 22,719	3,349	42,545 280,884 68 632 3,152 23,592	42,096 267,583 66 487 2,883 20,563	5,971 39,537 16 99 429 3,052	5,296 33,724 12 104 403 2,943	575 3,761 9 60 436	7,625 52,121 22 200 655 4,860	7,376 50,405 30 287 720 4,505	1,637 11,373 8 56 192 1,371	1,011 7,604 1 5 47 338	-	32,012 3 209,163 20 572 1,935 13,775	31,339 203,679 75 1 647 1,918 13,326	75.2 74.5 104.4 104.4 158.4	74.4 76.1 114.3 133.1 66.5 64.8	10,533 71,721 60 1,217 9,817	4,874 38,024 52 756 5,741	3,413 22,572 28 777 5,779	2,463 11,463 202 702 4,275
Wabash Tinos Ann Arbor Tinos Western Maryland Tinos	2,393 2,393 294 294 846 846	8,892 58,270 738 5,201 3,293 24,392	2,696	10,154 66,201 793 5,312 3,511 25,896	9,403 63,374 734 5,064 3,021 24,043	1,203 8,074 96 666 463 3,727	1,238 8,457 106 673 411 3,360	885 17 17 81 47 359	1,320 9,157 134 933 634 4,336	1,196 9,833 133 931 650 4,586	363 2,540 31 214 207 1,426	309 2,168 32 201 101 700	4,119 27,287 343 2,288 1,086 7,831	7,363 49,539 630 4,233 2,493 18,132	7,093 50,106 631 4,243 2,437 17,827	72.5 74.8 79.4 79.7 71.0	75.4 79.1 86.0 83.8 80.7 74.1	2,792 16,662 163 1,079 1,017 7,764	1,019 5,862 74 457 568 4,083	1,121 6,849 66 443 734 5,256	883 4,662 38 302 517 4,394
Western PacificJuly Wisconsin CentralJuly 7 mos.	1,193 1,193 1,042 1,042	3,966 27,744 2,299 15,919	289 1,418 68 261	4,361 29,841 2,514 17,171	3,930 27,113 2,573 16,795	833 437 2,714	4,979 609 2,737	109 593 37 286	627 4,474 381 2,650	683 4,508 404 2,879	1,236 1,236 87 606	1,380 72 512	1,351 9,175 993 6,691	3,286 22,388 1,991 13,344	3,149 21,452 2,214 13,711	75.4 79.2 77.7	80.1 79.1 86.0 81.6	1,075 7,454 523 3,826	3,001 151 1,044	526 3,843 212 1,822	2,804 106 1,304

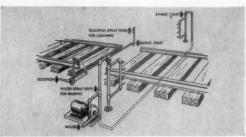


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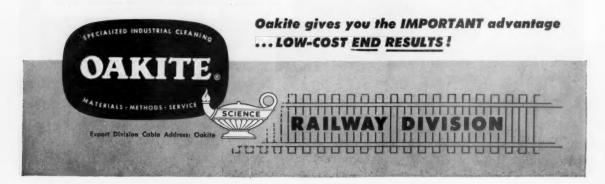
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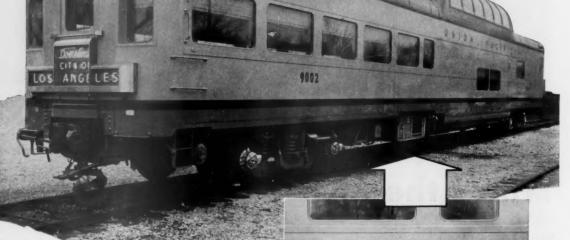
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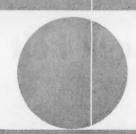


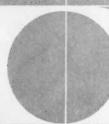














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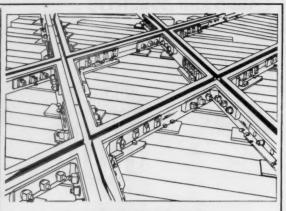
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C	
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Agency—Fred H. Ebersold, Inc. Classified Advertisers 81	D
Colorado Fuel & Iron Corp., The 30, 31	
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F	T
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1	W
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